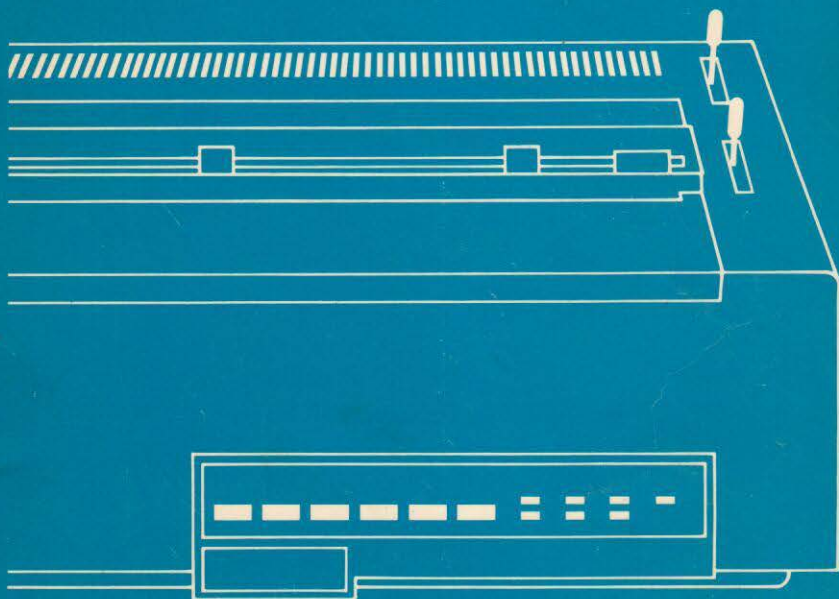


Quietwriter® III Printer

Guide to Operations



Fourth Edition (August 1987)

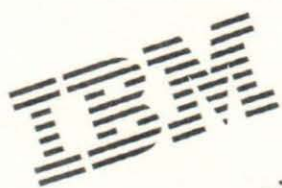
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Quietwriter® III Printer
Guide to Operations

FCC Notice

The IBM Quietwriter® III Printer generates and uses radio frequency energy. If the printer is not installed and used in accordance with the operating instructions, technical or service information, it may interfere with radio or television reception. It has been tested and found to comply with the limits for a Class B computing device pursuant to Subpart J of Part 15 of Federal Communications Commission (FCC) rules, which are designed to provide reasonable protection against such interference when operated in a residential area.

If this printer interferes with radio or television reception, which can be determined by switching the printer off and on, the user is encouraged to try one or more of the following:

- Move the receiving antenna on the radio or television;
- Relocate the printer in relation to the radio or television;
- Plug the printer into a different electrical outlet from the radio or television.
- Ensure that the grounding wire is tightly secured.

If necessary, contact your Authorized IBM dealer or IBM service representative for additional suggestions.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. It is the responsibility of the user to correct such interference.

Warning: To comply with FCC regulations on electromagnetic interference for a Class B computing device, the printer cable must be shielded and properly grounded.

To assure compliance with FCC regulations for a Class B computing device, use the six foot IBM cable, Part Number 1525612. Use of substitute cable not properly shielded and grounded may result in violating FCC regulations.

CAUTION

Connect this printer only to a properly grounded outlet of the proper voltage.

Japanese VCCI Notice

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VCCI-1

Preface

This publication describes how to operate the IBM "Quietwriter" III Printer and some of the options available for the printer. The manual has seven chapters and an index. Start at the beginning of the manual and work through Chapter 3 to learn how to set up and operate your printer.

Use Chapter 4 as a reference tool after you have learned the basic operations of your printer. As you become familiar with your new printer, you will find that the ASCII code charts help you use the control, graphic, and special character set codes. In addition, you can alter the way your printer functions by changing the setup switch settings.

As you go through this manual, refer to the "Glossary" on page 7-1 for definitions of any terms that may be unfamiliar to you.

With "Problem Determination Procedures" on page 6-1 you can diagnose many minor problems yourself, saving downtime for service to the printer.

Below is a description of what you will find in each chapter.

"Introduction" highlights the special functions of the printer and provides safety guidelines.

"Getting Started" explains how to turn on the printer, install the ribbon, attach the top cover, run the printer self test, attach the printer cable, load single sheets of paper, and print a simple job.

"Operating the Printer" explains the printer functions and front panel buttons and lights. It tells you how to interrupt printing and reset the printer, choose print modes, select embedded and pluggable fonts, and install and use the pinwheel form feeder.

"Reference" explains in detail the printer panel lights, setup switches, and graphics capability. It describes the basic printer control codes, lists the ASCII codes, and explains how software packages work with your printer. This chapter also contains additional information about the cover switch, printer interface, and print quality.

"Supplies" lists the available supplies and tells you how to obtain them. It also explains how to change the ribbon and printhead.

"Problem Determination Procedures," helps you diagnose and correct problems that may occur during setup or normal operations.

"Glossary" explains some terms used in this manual which may be unfamiliar to you.

Related Publications

If needed, additional technical information can be found in the *IBM "Quietwriter" III Printer Technical Reference Guide* (Item No. 1319601 [Form No. S544-4083]) or the *IBM "Quietwriter" III Printer Hardware Maintenance and Service Manual* (Item No. 1319580 [Form No. S544-4084]).

Contents

Introduction	1-1
Basic Features	1-1
Options	1-1
For Assistance	1-2
Safety Guidelines	1-3
 Getting Started	 2-1
General Functions	2-2
Printer Self Test	2-10
Attaching the Printer Cable	2-12
Printing a Document	2-14
 Operating the Printer	 3-1
Printer Status (Ready/Not Ready)	3-1
Interrupting Printing	3-2
Resetting the Printer	3-2
Paper Movement	3-2
Print Mode Selection	3-4
Fonts and Pitches	3-6
Pinwheel Form Feeder	3-13
 Reference	 4-1
Printer Lights	4-1
Cover Switch	4-4
Interface	4-5
Setup Switches	4-6
Print Quality	4-12
Contrast Control	4-13
Printer Commands	4-14
Quick Reference	4-16
Printer Control Codes and Escape Sequences	4-20
Printer Table with ASCII Decimal and Hexadecimal Values	4-55
Programming Reference	4-65
 Supplies	 5-1
Ordering Supplies	5-1
IBM Quiet® III High Yield Printer Ribbon	5-1
IBM Quiet® III Printhead	5-5
IBM Electronic Font III	5-11

Paper	5-12
Transparencies	5-13
Problem Determination Procedures	6-1
Power-On Self Test	6-14
Printer Self Test	6-15
Hex Trace Dump	6-17
Glossary	7-1
Index	X-1

Introduction

The IBM "Quietwriter" III Printer produces letter-quality printing at burst speeds of 100 to 171 characters per second (cps), and draft mode printing at burst speeds of 160 to 274 cps. The speed depends on the pitch and print mode selected.

Basic Features

- Four embedded fonts
- Emphasize, doublestrike, superscript, subscript, and double-wide printing
- Three print modes, each with a different ribbon usage rate
- Graphics printing (charts and pictures) using all-points-addressable (APA) printing technology
- Up to a 335 mm (13.2 in) writing line
- Five font pitches supported (10, 12, 15, 17.1 and proportional space)

Options

- Four pluggable fonts with software or operator switching.
- Continuous forms paper handling (with forward and backward paper movement)
- Cut-sheet feeders (1-drawer feeder and 2-drawer feeder with envelope option)
- Downloadable fonts

For Assistance

If you have problems with the printer, refer to "Problem Determination Procedures" on page 6-1 for assistance. If you need additional help with setup or operation of your printer, call your point of purchase. You will need a spare printhead and ribbon to diagnose some problems.

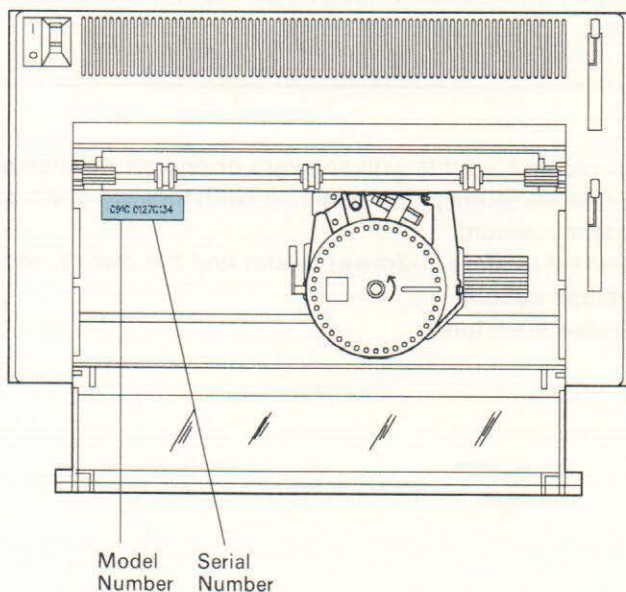
The following information should be recorded and retained:

IBM Product Name _____

IBM Model No. _____

IBM Serial No. _____

The product name is located on the logo plate on the top of the printer cover. The model number and serial number are located inside the printer on the bottom cover as shown below.



Safety Guidelines

- Keep hair and personal articles out of the printing and ribbon area when the printer is on to prevent getting them caught in the printer. Be sure to comply with this warning and ask others to do so.
- The IBM "Quietwriter" III Printer incorporates Class 1 construction as defined by the International Electrotechnical Commission Publication 380, "Safety of Electrically Energized Office Machines," and other national standards.

Class 1 construction provides protection against electric shock by protectively grounding the accessible metal parts of the machine.

The IBM "Quietwriter" III Printer is equipped with a grounding type (3-wire) electrical cord because protective grounding is necessary.

- For Continued Protection Against Electrical Shock:
 1. Connect only to a properly grounded electrical outlet of the proper voltage. The voltage range your printer will accept appears on a label on the bottom of the printer.
 2. Refer servicing to trained professional service personnel.
 3. When servicing, use only identical replacement parts.

Grading Guidelines

Grading is a process of determining the relative value of a piece of property or a piece of property interest. It is a process of determining the relative value of a piece of property or a piece of property interest.

The following are the guidelines for grading a piece of property or a piece of property interest.

1. The first step is to determine the relative value of the property or property interest.

2. The second step is to determine the relative value of the property or property interest.

3. The third step is to determine the relative value of the property or property interest.

4. The fourth step is to determine the relative value of the property or property interest.

5. The fifth step is to determine the relative value of the property or property interest.

6. The sixth step is to determine the relative value of the property or property interest.

7. The seventh step is to determine the relative value of the property or property interest.

8. The eighth step is to determine the relative value of the property or property interest.

9. The ninth step is to determine the relative value of the property or property interest.

10. The tenth step is to determine the relative value of the property or property interest.

11. The eleventh step is to determine the relative value of the property or property interest.

12. The twelfth step is to determine the relative value of the property or property interest.

13. The thirteenth step is to determine the relative value of the property or property interest.

14. The fourteenth step is to determine the relative value of the property or property interest.

15. The fifteenth step is to determine the relative value of the property or property interest.

16. The sixteenth step is to determine the relative value of the property or property interest.

17. The seventeenth step is to determine the relative value of the property or property interest.

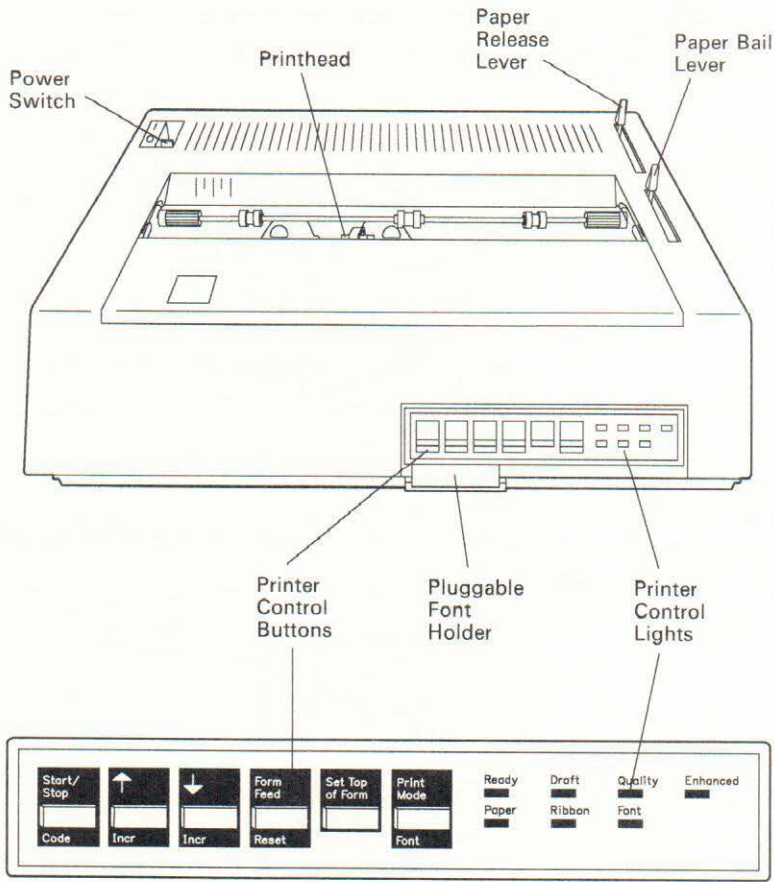
18. The eighteenth step is to determine the relative value of the property or property interest.

19. The nineteenth step is to determine the relative value of the property or property interest.

20. The twentieth step is to determine the relative value of the property or property interest.

Getting Started

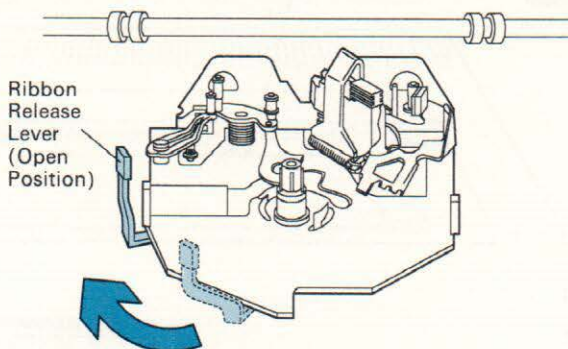
Refer to the illustration below to locate the features on your printer.



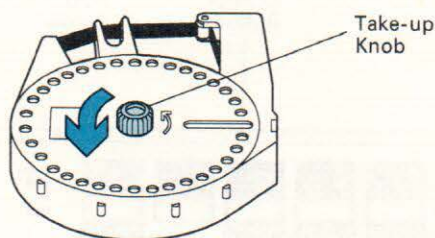
General Functions

Installing the Ribbon

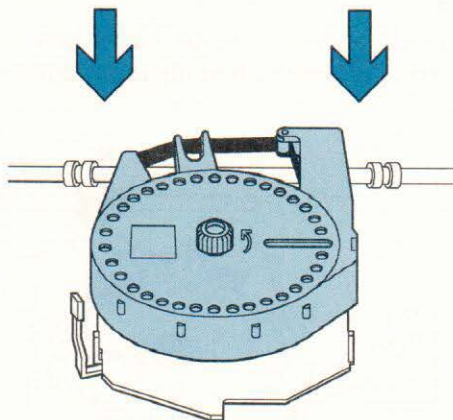
1. Open the printer cover.
2. Push the ribbon carrier to the center of the printer.
3. Push the ribbon release lever away from you to the open position.



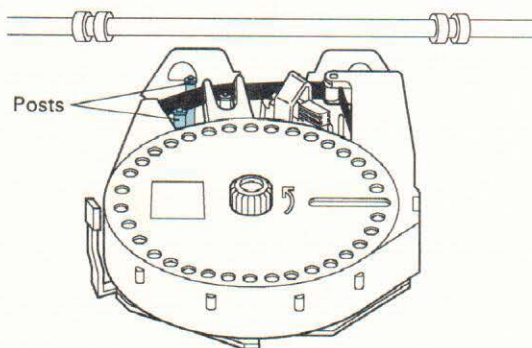
4. Locate the ribbon in the accessory box that came with your printer.
5. Turn the ribbon take-up knob in the direction of the arrow to take up any loose ribbon.



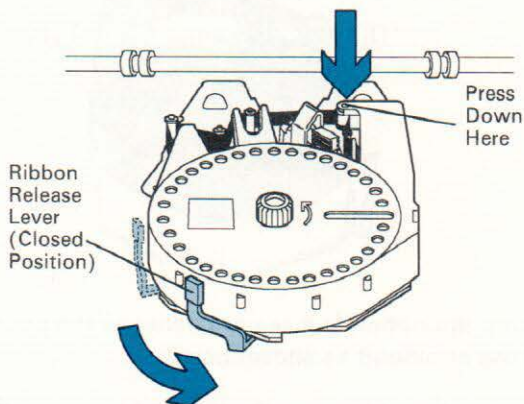
6. Place the ribbon cartridge on the carrier.



7. Make sure the ribbon is threaded between the posts and is behind the printhead as shown below.



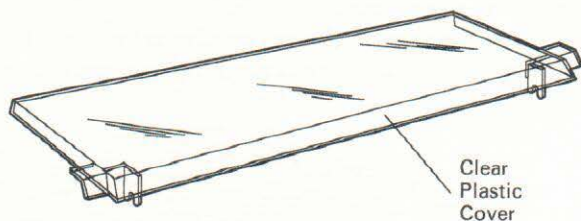
8. Press down on the ribbon cartridge to make sure it is securely seated.
9. Pull the ribbon release lever toward you to the closed position. Then check to be sure that the lever is *fully* closed as shown below.



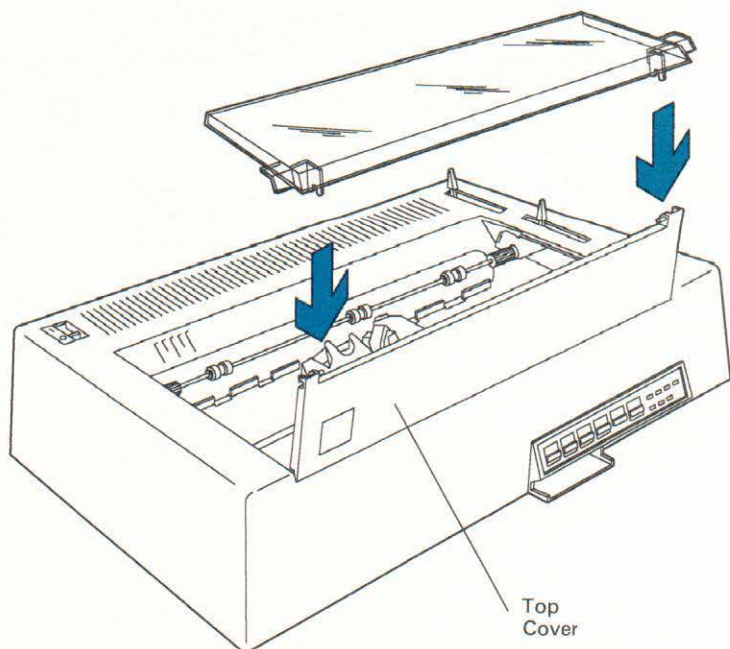
10. Close the printer cover.

Installing the Top Cover

1. Locate the clear plastic cover that came in the accessory box with your printer.



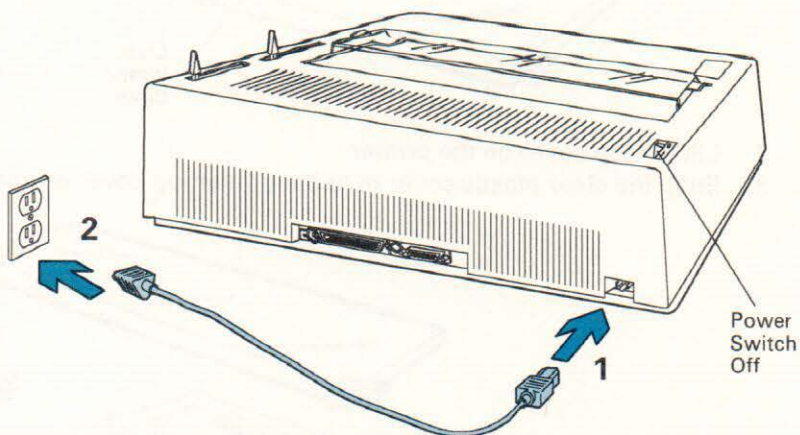
2. Lift the top cover on the printer.
3. Snap the clear plastic cover onto the printer top cover as shown.



4. Close the printer cover. Press down firmly on the cover to make sure it is completely closed.

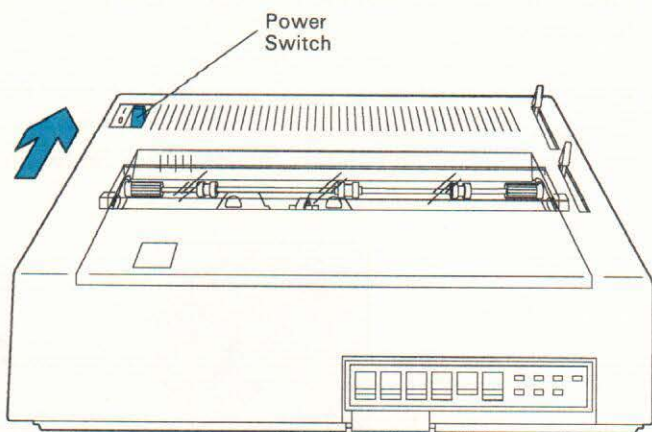
Installing the Power Cord

1. Locate the printer power cord.
2. Make sure the printer Power switch is toward the front of the printer in the off position (O).
3. Plug the smaller end of the cord into the back of the printer.
4. Plug the larger end of the cord into the wall outlet.



Turning on the Printer

Push the Power switch toward the on (I) position to turn on your printer.



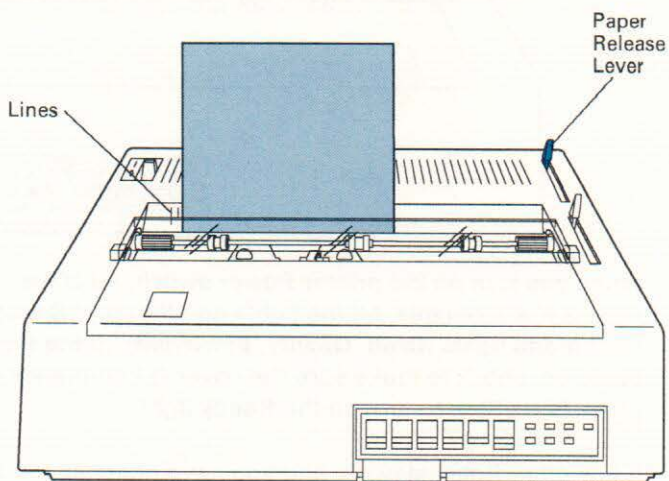
When you turn on the printer Power switch, all of the lights come on. After a few moments, all the lights go off except **Ready** and one of the print mode lights (**Draft**, **Quality**, **Enhanced**). If the **Ready** light did not come on, check to make sure the cover is completely closed. Then press **Start/Stop** to turn on the **Ready** light.

If any other lights stay on, and you have not changed the switch settings, you may have a printer problem. See "Problem Determination Procedures" on page 6-1.

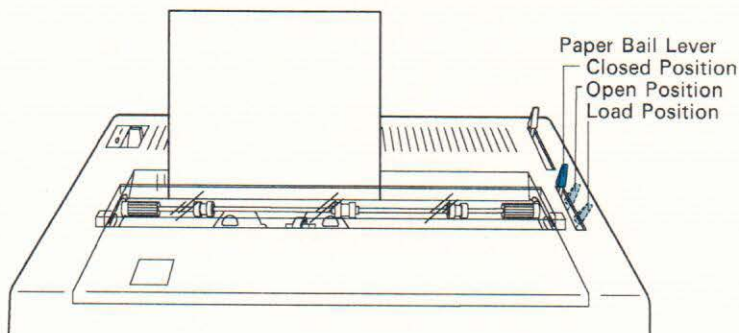
Inserting Single Sheets of Paper

1. Make sure the printer Power switch is on.
2. Make sure the paper release lever is all the way back.
3. Insert the paper so that the left edge aligns with the lines on the back cover.

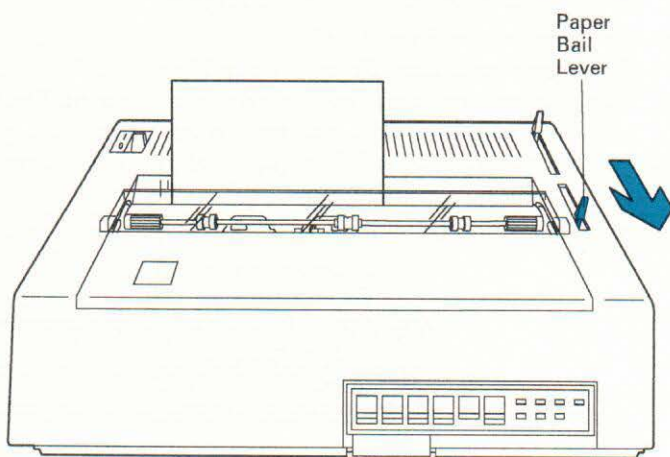
Note: There are five recessed lines in the face of the back cover. The center line shows where the left edge of the first character will print. Insert the paper to the left of the center line.



Note: The paper bail lever has three positions as shown below.



4. Pull the paper bail lever all the way toward you until the paper begins to feed. Then, gently release the lever.
 - Do *not* push the paper bail against the platen. The paper bail will automatically move against the platen after the printer has started to print.

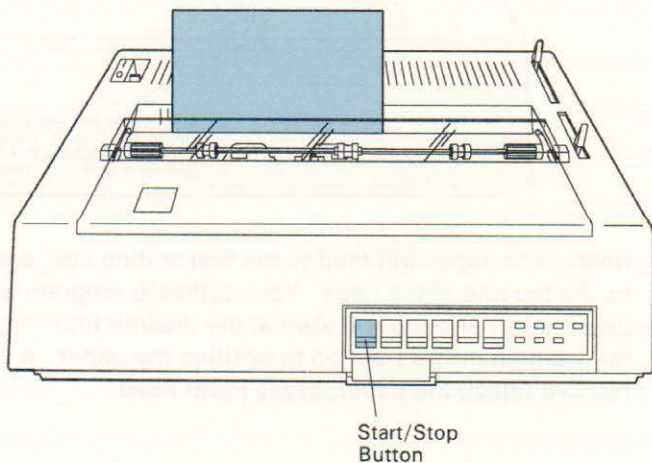


Note: The paper will feed to the first writing line, and this line is set as the top line of the page. Your software program should move the paper up so printing will start at the desired location; or, you can use the ↑ button or the ↓ button to position the paper. If you need to remove (eject) the paper, press **Form Feed**.

Printer Self Test

After you have installed paper and ribbon, run the Printer Self Test to verify that your printer is operating correctly.

1. Make sure there is paper in the printer.
2. Turn the printer Power switch off.
3. Press and hold **Start/Stop** on the printer.
4. Turn the printer Power switch on while pressing **Start/Stop**. You can release **Start/Stop** when the printer beeps.
 - The printer will print the test continuously. To stop the test, press and release **Start/Stop**.
 - To resume printing, press **Start/Stop**.

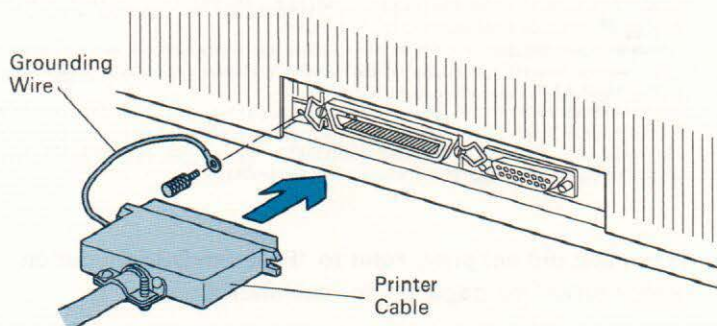


[illegible]

5. To remove the paper, press **Start/Stop** to stop printing; then press **Form Feed**.
6. To end the Printer Self Test, press **Code** and **Reset** or turn the printer Power switch off.

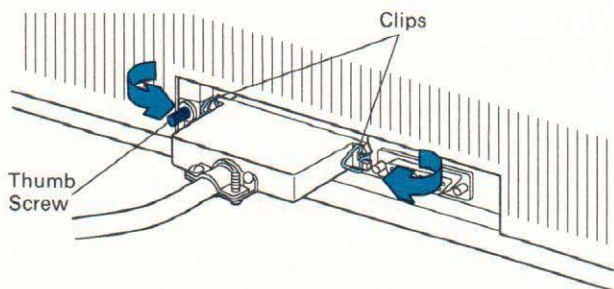
Attaching the Printer Cable

1. Turn off the printer Power switch and the computer Power switch.
2. Attach the printer cable from your computer to the large socket on the back of the printer. Use the shape of the plug to help you attach the cable properly.



Note: The printer cable is not provided with the printer. Follow your computer instructions to attach the printer cable to your computer.

3. Push the clips into the notches on the plug to hold the plug in place.
4. Attach the grounding wire from the printer cable using the thumb screw from your accessory kit.



You have now finished setting up your printer.

Printing a Document

Now you are ready to print a simple document. The following steps tell you how.

1. Turn the printer Power switch on.
2. Insert a sheet of paper.
3. Send a short job (less than a page) from your computer to your printer.
 - a. If your job does not print, go back through "Getting Started" on page 2-1 and verify that you have performed all the steps correctly.
 - b. Try printing the job again.
4. After the job has printed, press **Form Feed** to remove the sheet of paper.

When printing a multipage job, the printer will stop at the end of each page and the **Paper** light will come on solid. After inserting a new sheet of paper, press **Start/Stop** to resume printing.

Note: If you have any problems with your printer, first consult "Problem Determination Procedures" on page 6-1. If you need further assistance, call your point of purchase or local IBM dealer.

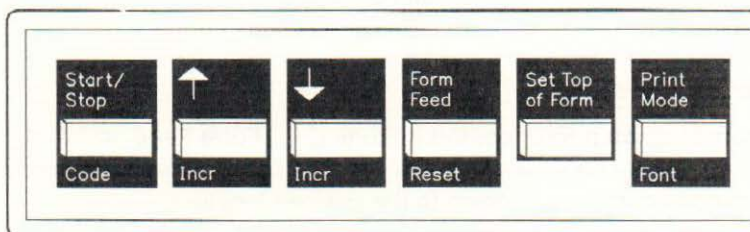
Operating the Printer

The buttons on the printer front panel allow you to use a variety of functions without having to change switch settings or send software commands. Each printer control button has a primary function which is described at the top of the button. Most buttons have a secondary function, which is described at the bottom of the button. You press and hold the **Code** button while pressing a second button to use these secondary functions.

Each of the seven lights on the printer front panel indicates one or more printer conditions. Some printer conditions are indicated by a combination of lights.

Printer Status (Ready/Not Ready)

The **Start/Stop** button controls the ready/not ready status of your printer.



- Press and release **Start/Stop** to turn on the **Ready** light, if it was off. When the **Ready** light is on solid:
 - The printer can accept commands from the computer.
 - You can operate all of the printer control buttons (if the printer is not printing).
- Press and release **Start/Stop** a second time to turn off the **Ready** light. When the **Ready** light is off:
 - The other front panel lights may be on or off.
 - The printer does not accept commands from the computer.
 - The carrier is at the center of the platen.
 - You can operate all of the printer control buttons.

Interrupting Printing

To *interrupt* printing, press and release **Start/Stop**. The printer will stop printing, and the carrier will return to the center of the platen.

To continue printing, press **Start/Stop**. The printer will complete the job, starting where it was interrupted.

Resetting the Printer

Once you have canceled a job from the computer, you will still need to clear the printer buffer before sending another job.

Reset is a secondary function of the **Form Feed** button. To use the Reset function, hold down **Code** while you press **Reset**. The printer will:

- Eject the paper or feed the next form.
- Clear the printer buffer.
- Reset the printer to default conditions.

Paper Movement

Several of the printer control buttons (**↑**, **↓**, **Form Feed**, and **Set Top of Form**) control paper movement. Use the paper movement buttons to move the paper up or down to the desired location.

The printer was set at the factory to feed six lines of paper per inch. If you wish to change the vertical paper movement, consult:

- "Switch Group 1 (Eight Switches)" on page 4-7
- "Printer Commands" on page 4-14.

↑ (Incr)

The **↑** button moves the paper up.

- When you press **↑**, the paper moves up one line.
- When you press *and hold* **↑**, the printer feeds the paper continuously until you release the button.

- When you press **Code** and ↑ (**Incr**), the paper moves up slightly (1/120th of an inch [.21 mm]) rather than one line. Use it to help finely adjust the writing line.
- When you press *and hold* **Code** and ↑ (**Incr**), the printer feeds the paper continuously (in 1/120th of an inch increments) until you release the buttons.

↓ (**Incr**)

The ↓ button moves the paper down.

- When you press ↓ the paper moves down one line.
- When you press *and hold* ↓, the printer feeds the paper continuously until you release the button.
- When you press **Code** and ↓ (**Incr**), the paper moves down slightly (1/120th of an inch [.21 mm]) rather than one line. Use it to help finely adjust the writing line.
- When you press *and hold* **Code** and ↓ (**Incr**), the printer feeds the paper continuously (in 1/120th of an inch increments) until you release the buttons.

Form Feed

The **Form Feed** button can be used to feed single sheets out of the printer. When using continuous forms, **Form Feed** advances forms to the first line of the next form. Your printer can print 66 lines per page (by default). To set a different page length, consult:

- "Setup Switches" on page 4-6
- "Software Support" on page 4-65.

Print Mode Selection

Your printer has three print modes: Draft, Quality, and Enhanced. You can control print speed, print quality, and ribbon usage by the print mode you select.

The Draft mode is a high-speed (160 cps burst speed at 10 pitch) form of printing which is recommended for internal correspondence and draft documents. The Draft mode uses less ribbon than the Quality mode.

In the Quality mode, your printer prints a line of characters at a burst speed of 100 characters per second (cps) when a 10-pitch font is used. The Quality mode is recommended for printing letters and most other documents.

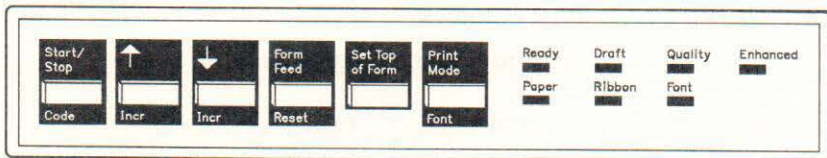
In the Enhanced mode, you will get the highest quality of print at a burst speed of 80 cps (for 10 pitch). It is recommended that the Enhanced mode be used when necessary to print letter-quality documents on rough papers. The Enhanced mode uses more ribbon than the Quality mode. Therefore, the Enhanced mode should be used only when necessary.

Your printer was shipped from the factory with print mode in the Quality setting. You may find that you use the Draft or Enhanced mode more often than Quality mode. If so, you can change your printer's switch settings so that when you turn the printer on, it will be in one of the other print modes. To change the settings, see "Switches 5 and 6, Print Mode" on page 4-11.

You can also select a print mode without changing the setup switches. You do this by using the printer control buttons on the printer front panel.

To select a print mode using the printer control buttons:

1. Press the **Print Mode** button. A light will come on to indicate which print mode has been selected. (See the following chart for a summary of the print mode lights.)
2. Release the **Print Mode** button. The printer will print in the mode you have selected until you either select another mode, reset the printer, or turn the printer off.



The following chart summarizes the print mode information. The speed given is for a 10-pitch typestyle.

Mode	Indicator	Speed (Burst)
Draft	Draft light on	160 cps
Quality	Quality light on	100 cps
Enhanced	Enhanced light on	80 cps

Note: Your software program may override this selection.

Fonts and Pitches

A *font* is a complete set of characters in a particular typestyle and type size.

Pitch refers to the number of characters that print per inch. A 10-pitch typestyle prints ten characters per inch.

Embedded Fonts and Pitches

Your printer contains four embedded fonts:

- Courier typestyle in 10 pitch – Font 1
- Courier typestyle in 12 pitch – Font 2
- Courier typestyle in 17 pitch (compressed print) – Font 3
- Boldface – a proportionally spaced (PS) font which resembles Courier – Font 4

Below is an example of each.

Courier 10 (Font 1)

[illegible]

Courier 12 (Font 2)

[illegible]

Pluggable Fonts

You can purchase pluggable cartridges which provide you with alternate fonts (for example, Gothic or Prestige). Each cartridge contains up to four different fonts. These cartridges plug into the front of your printer.

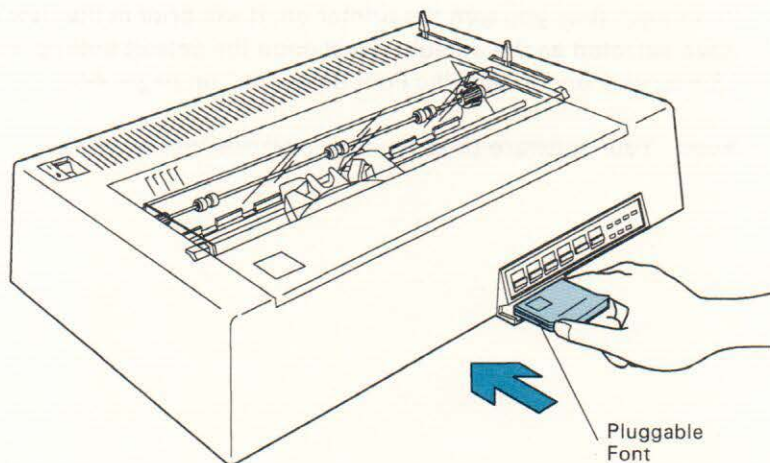
For ordering information, see "Ordering Supplies" on page 5-1.

Inserting Pluggable Font Cartridges

Insert an Electronic Font III cartridge.

Note: Do not insert or remove a pluggable font cartridge when the printer is printing.

1. If the printer is printing, press and release **Start/Stop**.
2. Push the cartridge firmly into the font holder until it is securely seated.
 - The printer will beep when the cartridge is inserted. If it does not beep, push in on the cartridge to make sure it is securely seated.
 - The printer will beep again when a font is ready to be selected.



Removing Pluggable Font Cartridges

1. If the printer is printing, press and release **Start/Stop**.
2. Pull the cartridge out of the font holder.
 - If the **Font** light comes on and the printer beeps, the cartridge you removed is needed to complete the job. Insert the cartridge and press **Start/Stop** to complete the job.

Downloadable Fonts

For an even greater variety and selection of typestyles, you can purchase font download diskettes which contain additional typestyles. You can then transfer (download) the characters from the diskette to a blank pluggable cartridge called a *download* cartridge. Contact your point of purchase or local IBM dealer for more information.

Checking the Active Font

You may wish to check the printer to see which font is *active*. The next job sent from your computer will print in the *active* font unless your software program overrides it.

To check the active font, *press and hold* **Code** while you press and release **Font**. The top four lights on the printer panel come on. *The blinking light indicates the active font.* For example, if font 1 is the active font, the **Ready** light will blink and the other three lights will be on solid. Below is a summary of the font lights.

Active Font	Ready Light	Draft Light	Quality Light	Enhanced Light	Font Light
1	Blinking	On solid	On solid	On solid	See note below.
2	On solid	Blinking	On solid	On solid	See note below.
3	On solid	On solid	Blinking	On solid	See note below.
4	On solid	On solid	On solid	Blinking	See note below.

Note: When a pluggable font is active, the **Font** light comes on until you release the **Code** button.

As you can see, the lights used to indicate font selection are the same ones used to indicate ready status and print mode status. However, when the lights indicate their *labeled* function (ready, print mode status), only one light will be on and it will be on solid. For example, **Ready** will be on when the printer is in the ready state. During the font selection mode, when font 1 has been selected, the **Ready** light will blink and the **Draft**, **Quality**, and **Enhanced** lights will be on solid.

When **Code** is released, all the lights will again indicate their *labeled* function.

Manually Selecting a Font

You can print a job in another font without having to change the setup switches. You do this by using the **Code** and **Font** buttons on the printer front panel.

Note: You can select fonts in this manner *only* between print jobs. When you attempt to select a font before a job is complete, the printer will beep to indicate that a font cannot be selected. Also, be sure the printer top cover is closed before selecting a font manually.

To manually select a font using the printer control buttons:

1. Press and hold **Code** while you press **Font** to put the printer in the font selection mode.
 - The top four lights on the front panel (**Ready**, **Draft**, **Quality**, and **Enhanced**) come on to indicate the printer is in the font selection mode. One of the lights will blink to indicate which font is active. See the following charts for a summary of the font selection lights.
2. Continue to hold **Code** while you press and release **Font** to select the next font. Each time you press and release the **Font** button, the next font is selected.
 - If the active font is an embedded font, the printer will cycle through the embedded fonts first and then through the pluggable fonts if a cartridge is installed. If a cartridge is not installed, the printer will continue to cycle through the embedded fonts as you press and release the **Font** button.
 - If the active font is a pluggable font, the printer will cycle through the pluggable fonts first and then through the embedded fonts. When a pluggable font is active, the **Font** light will be on in addition to the other four lights (**Ready**, **Draft**, **Quality**, and **Enhanced**).
3. Release the **Font** button when you have selected the mode you need.
4. Release **Code** to exit the font selection mode.
 - Any jobs you send from your computer to your printer will print in the font you just selected until you select a different font, reset the printer, turn the printer off, or change the setup switches. Remember that software commands override this function.

Summary of Lights for Font Selection Modes

Embedded Fonts

Font Selected	Ready Light	Draft Light	Quality Light	Enhanced Light	Font Light
1	Blinking	On solid	On solid	On solid	Off
2	On solid	Blinking	On solid	On solid	Off
3	On solid	On solid	Blinking	On solid	Off
4	On solid	On solid	On solid	Blinking	Off

Pluggable Fonts

Font Selected	Ready Light	Draft Light	Quality Light	Enhanced Light	Font Light
1	Blinking	On solid	On solid	On solid	On solid
2	On solid	Blinking	On solid	On solid	On solid
3	On solid	On solid	Blinking	On solid	On solid
4	On solid	On solid	On solid	Blinking	On solid

Pinwheel Form Feeder

An optional bi-directional pinwheel form feeder is available for your printer.

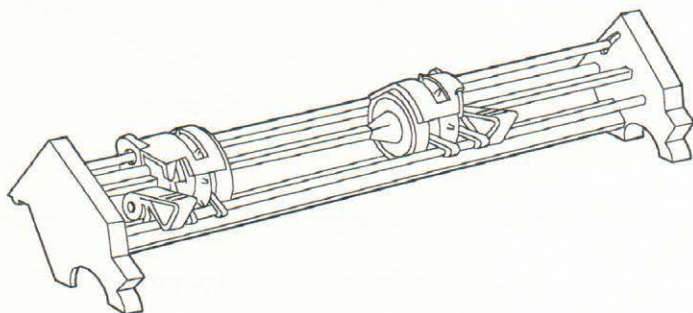
Note: To obtain ordering information for this pinwheel form feeder and for other available paper handlers, contact your point of purchase.

This pinwheel form feeder can use forms with an overall width of 76.2 to 381 mm (3 to 15 in) edge to edge, and with a pin-to-pin width of 63.5 to 368.3 mm (2.5 to 14.5 in).

Avoid printing on the perforations of the form paper because the printer may falsely report a ribbon problem and the printed forms may be difficult to read.

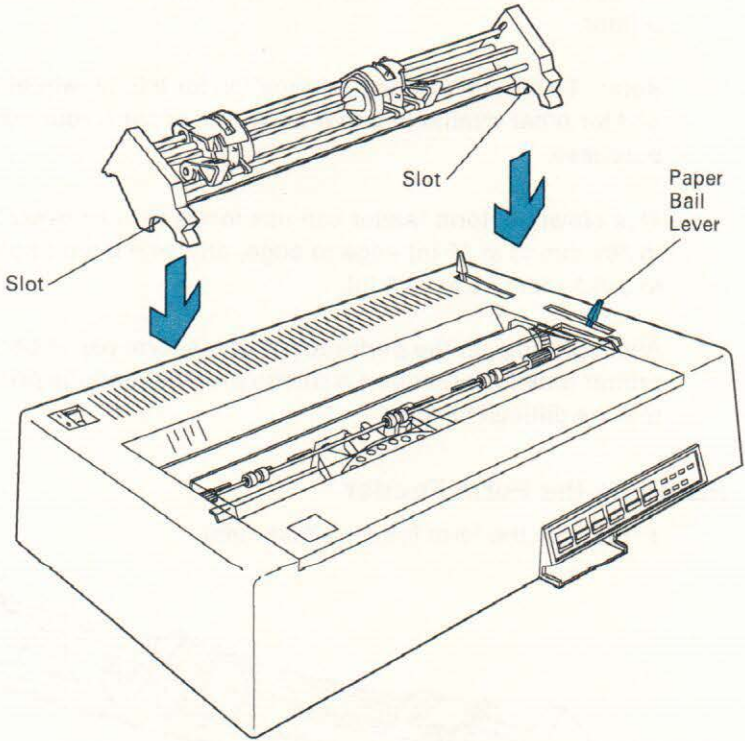
Installing the Form Feeder

1. Locate the form feeder attachment.



2. If the **Ready** light is on, press **Start/Stop**. The carrier moves to the center.

3. Pull the paper bail lever forward to the open position.
4. Lower the form feeder onto the printer so the slots rest on the platen shaft.

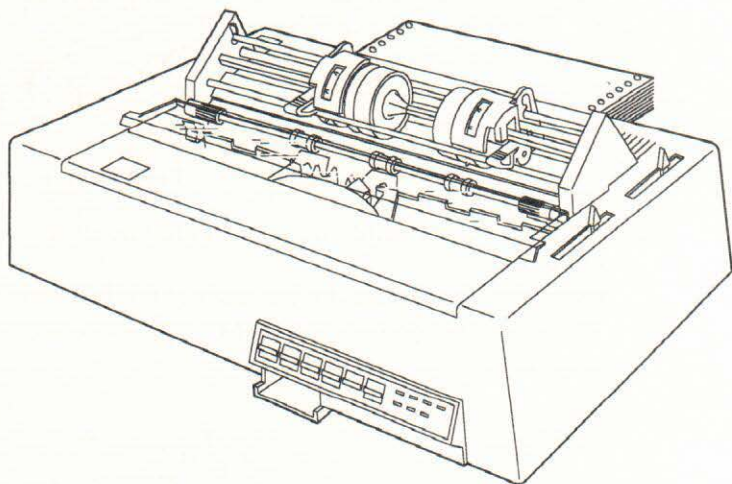


5. Press down on each side of the form feeder until it snaps into place.
6. Let the form feeder rest back against the printer cover.
7. Close the paper bail.

Installing Forms

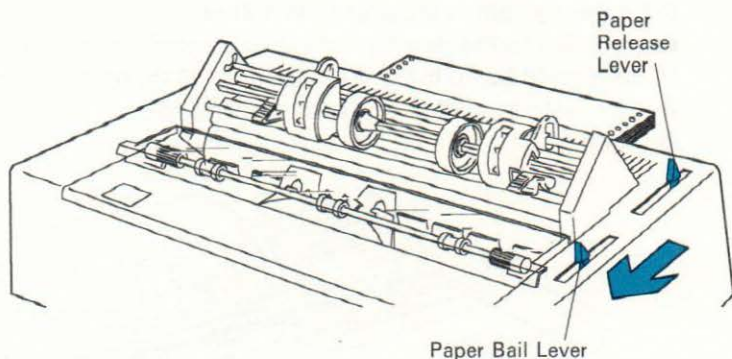
Use the following steps to install forms in your printer.

1. If the **Ready** light is on, press **Start/Stop**.
2. Position the forms directly behind and below the printer. The forms should be no more than 762 mm (30 in) below the printer. Adjust the forms left or right so the forms feed into the printer straight.

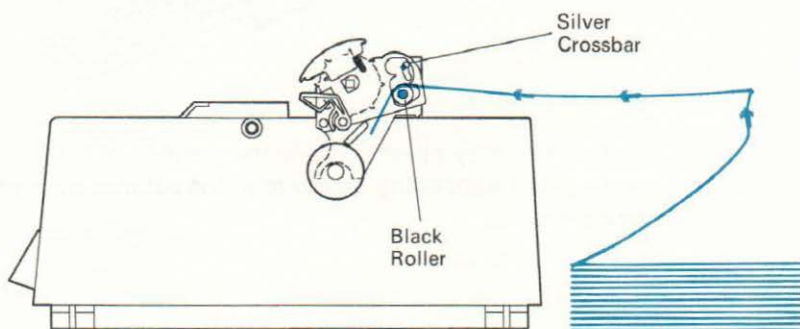


Note: You may need to adjust the position of the form feed paper right or left depending on the margins set by your software program.

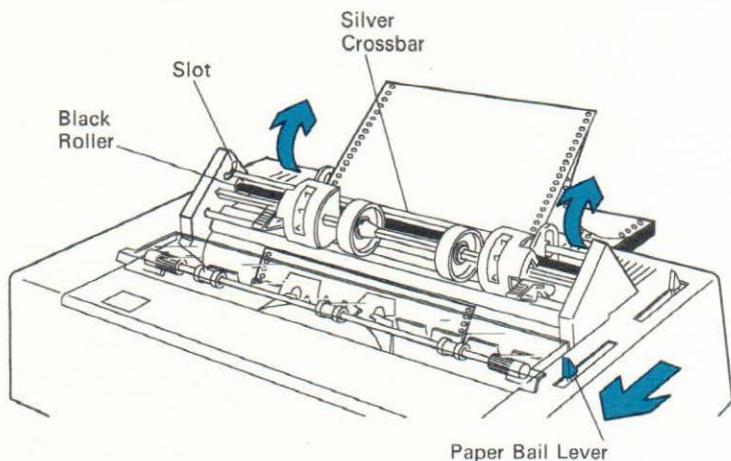
3. Make sure the paper release lever is pushed all the way back.
4. Pull the paper bail lever toward you until it stays in the open position.



5. Lift the silver crossbar up and toward you until it rests in the top of the slot.
6. Insert the form under the crossbar at the back end of the feeder. The form must go *over* the black roller and *under* the silver crossbar.



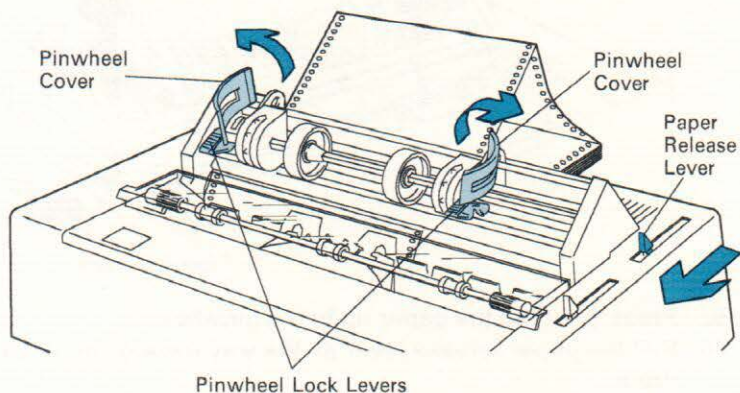
7. Lightly hold the form in place.
8. Pull the paper bail lever forward. The paper will feed up to the first writing line.



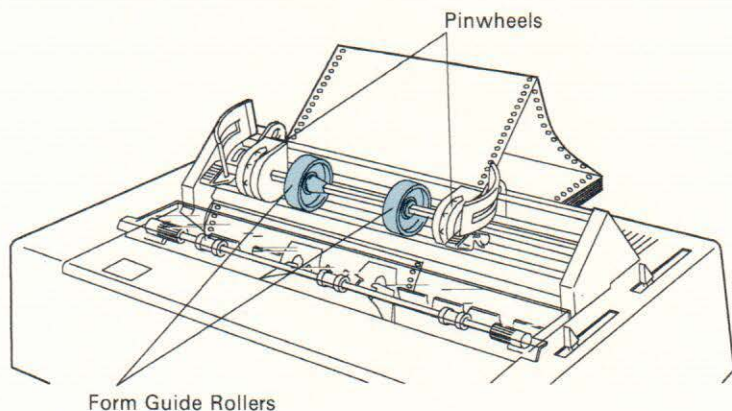
9. Press ↑ to feed the paper up to the pinwheels.
10. Pull the paper release lever all the way toward you and leave it there.

Note: The form will *not* feed correctly unless you pull the paper release lever forward.

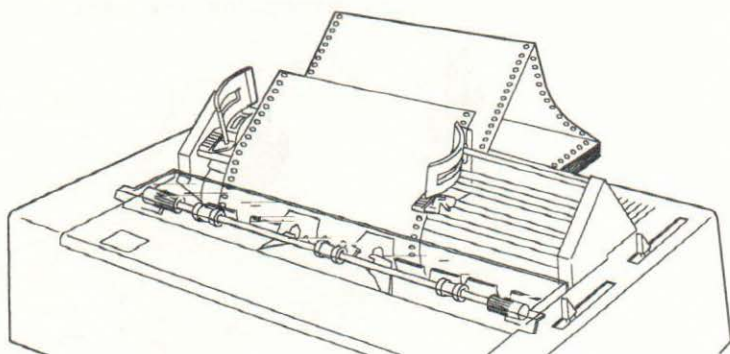
11. Open the pinwheel covers.
12. It may be necessary to move the pinwheels so the form fits over the pins. If you must move the pinwheels, unlock the pinwheels by tilting the blue pinwheel lock levers upward.
 - a. Slide the left pinwheel *all the way* to the left.
 - b. Move the paper left or right until the form fits over the pins on the left pinwheel.
 - c. Slide the right pinwheel to the right or left so the form fits over the pins.



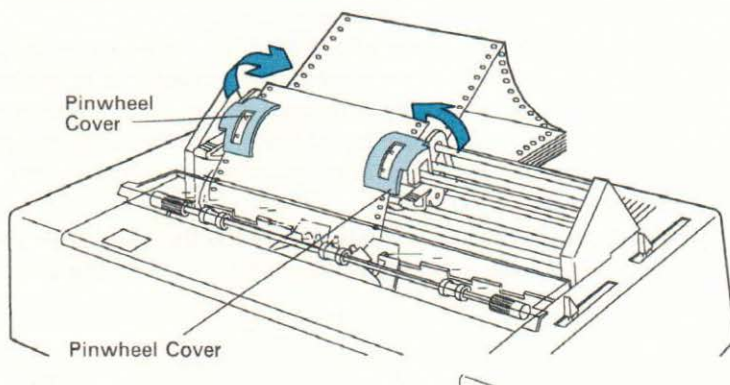
13. Position the form guide rollers between the pinwheels as shown below.



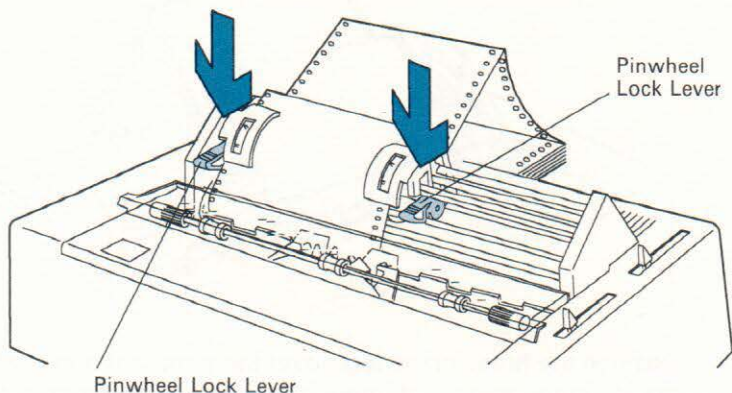
14. Pull the form through the feeder until the form extends above the pinwheels.



15. Position the holes in the form over the pinwheel pins and close the pinwheel covers. Remove any wrinkles by gently pulling the unused forms toward the rear of the printer.



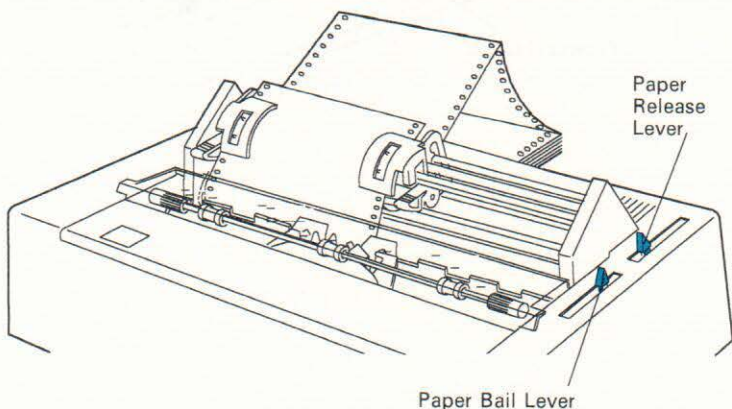
16. If you unlocked the pinwheels, lock them in place by pushing the blue pinwheel lock levers downward. Make sure the form is not wrinkled and fits smoothly between the pinwheels.



17. Push the silver crossbar back down into the bottom of the slot.

Note: Humid conditions and some types of supplies may cause paper feed problems when the silver crossbar is in the bottom of the slot. If paper feeding problems occur, try running the job with the silver crossbar in the top of the slot. When printing with the silver crossbar in the top of the slot, reverse line feeding should not be used.

18. Close the paper bail. (The feeder holds the paper bail partially open.) Make sure the paper release lever is all the way forward.

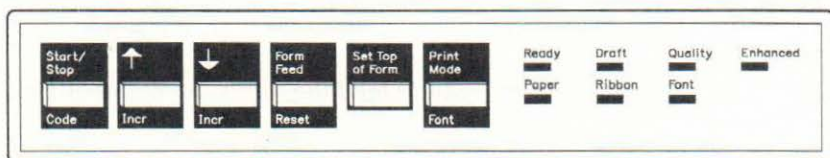


19. To set the top of form, follow these steps:

- a. Press **Form Feed** to advance the paper to the top line of the next form. Use \uparrow and \downarrow to adjust the first writing line.

Note: For precise alignment and consistent line spacing, the \uparrow button should be used *last* to adjust the writing line.

- b. Press **Set Top of Form** to set the top line of the form. The forms will advance to that same position on the next form each time you press **Form Feed**.



20. Send the job from the computer to the printer.

Check the following if the forms don't feed properly.

- Make sure the pinwheel form feeder is securely latched down onto the platen shaft.
- Make sure you've pulled the paper release lever all the way toward you and left it in the forward position.
- Make sure there are no wrinkles in the forms between the platen and the pinwheels by gently pulling the forms toward the rear of the printer.
- Make sure the forms are lined up straight behind the printer.

Note: To ensure reliable paper feeding, the paper must be correctly aligned.

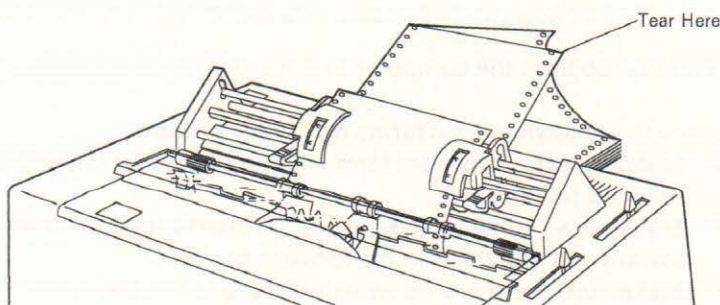
- Make sure that the forms are feeding *over* the black roller and *under* the silver crossbar at the rear of the feeder.

When the last *available* line of the current form prints and there are no more forms available, the **Paper** light comes on, and the printer beeps, indicating an out-of-paper condition.

Note: When you are operating the pinwheel form feeder under low humidity conditions and feeding printed forms into metal paper bins, you should ground the paper bins to the printer. Place the grounding wire from the paper bin on top of the printer cable grounding wire located at the rear of the printer. See "Attaching the Printer Cable" on page 2-12.

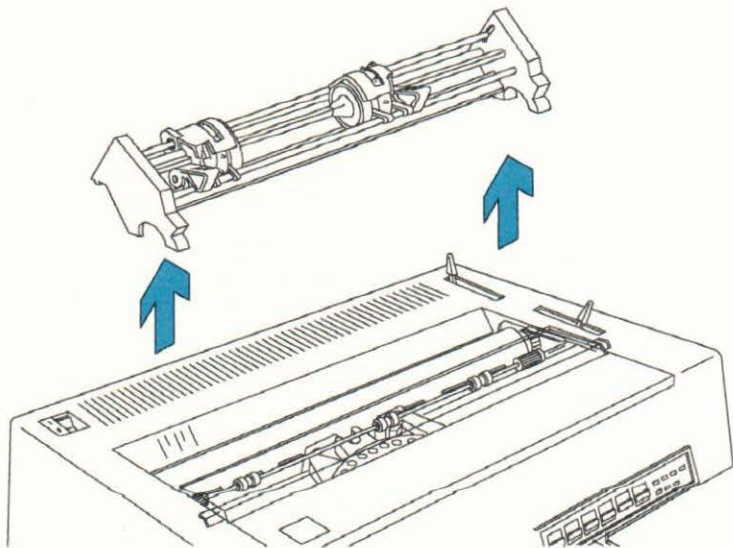
Removing Continuous Forms

1. Press **Start/Stop** to turn off the **Ready** light.
2. Carefully tear off the unfed forms along the perforations as close to the printer as possible. Hold the blank form with one hand and tear with the other.
3. Press **↑** or **Form Feed** to feed the forms out of the printer.



Removing the Form Feeder

1. If the **Ready** light is on, press **Start/Stop**. The carrier moves to the center.
2. Lift the form feeder from the printer.



Reference

Printer Lights

The lights on the printer front panel can indicate normal functions and/or those that need operator attention. Most of the normal functions of the lights have been covered in the previous chapter. A brief summary is listed below. Also given is a summary of operator attention conditions and possible solutions.

Ready ■	Draft ■	Quality ■	Enhanced ■
Paper ■	Ribbon ■	Font ■	

Ready Light

The **Ready** light is on solid when the printer is prepared to receive and print information from the computer.

The **Ready** light is also on solid or blinking to indicate font selection. See the chart under "Checking the Active Font" on page 3-10.

The **Ready** light also blinks when a stop command in your software program is sent to the printer.

Draft, Quality, and Enhanced Lights

These three lights have two functions. They indicate the print mode selected and also the font selected. See the charts under "Print Mode Selection" on page 3-4 and "Checking the Active Font" on page 3-10.

Paper, Ribbon, Font Lights

Read about these lights below; then, if necessary, see "Problem Determination Procedures" on page 6-1.

Paper

The **Paper** light comes on solid when more paper is needed to print a job but the printer senses that there is no paper. At that time, the printer beeps and stops printing, and the **Ready** light goes off.

After you supply paper or correct the problem another way, press **Start/Stop** to resume printing.

Note: See "Inserting Single Sheets of Paper" on page 2-8 if you need help. If the printer has a pinwheel form feeder attached, see "Pinwheel Form Feeder" on page 3-13. If you have any other paper handling option installed, refer to the operator guide for that option.

Ribbon

The **Ribbon** light comes on solid when the printer reaches the end of the ribbon or if a ribbon-related problem occurs during printing.

When the **Ribbon** light comes on, the printer beeps and stops printing, and the **Ready** light goes off.

Once you have replaced the ribbon or corrected the problem, press **Start/Stop** to turn off the light and resume printing.

Note: See "Changing Ribbons" on page 5-2 if you need assistance changing the ribbon.

Font

The **Font** light comes on solid when:

- A font was selected by your software program but the font was not found.
- A pluggable font was selected by your print application but not installed in your printer.
- A font download was requested but there was no download cartridge installed.
- A pluggable font cartridge was removed from the printer while a job was printing.

When one of the above conditions occurs, the printer will beep, the **Ready** light will go off and the **Font** light will come on. Install the font requested by your software program or change your software program to request another (available) font. Then press **Start/Stop** to continue printing.

If the correct cartridge is not available, press **Start/Stop**. The printer will choose a "best fit" font from the embedded fonts. (One that is closest in style and size to the one requested.)

During a download operation, if a download font was requested but a download cartridge is not available, press **Start/Stop**. The printer will discard the downloaded data.

If the cartridge needed to complete the job has been removed, the *same* cartridge must be reinstalled to complete the job; or, the job must be canceled and the printer reset.

The **Font** light blinks when:

- A download cartridge is installed in the printer but data was not successfully downloaded to the cartridge.

The printer will beep and the **Ready** light will go off. You can press **Start/Stop** to discard the downloaded data. You need to try the download operation again.

- You installed an incompatible font cartridge.
- You installed a defective cartridge.

The printer will beep and the **Ready** light will go off. When you remove the defective cartridge, the **Font** light will stop blinking. Insert a good cartridge to continue; or, press **Start/Stop** to ignore the error condition. The printer will choose a "best fit" font.

If you need help correcting the problem, see "Problem Determination Procedures" on page 6-1.

Cover Switch

The IBM "Quietwriter" III Printer is equipped with a cover switch. Each time you lift the top cover, the switch is activated, putting the printer in *not ready* condition. After the cover is closed, you must press **Start/Stop** to put the printer back into *ready* condition. See "Printer Status (Ready/Not Ready)" on page 3-1 for more information.

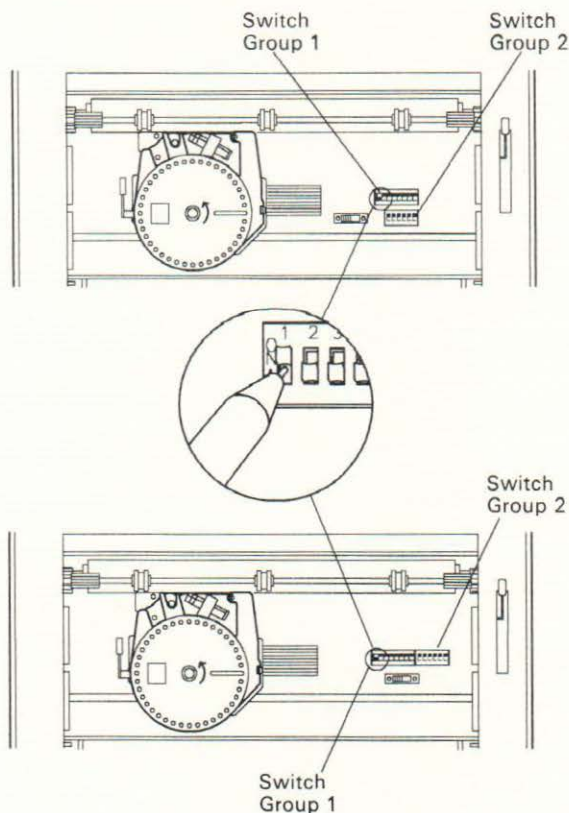
When you close the printer top cover, be sure it is completely latched down.

Interface

Your printer has an IBM Personal Computer Parallel Printer Interface, commonly referred to as a "Centronics-type" parallel interface. The interface is the connection between your computer and your printer. Information is transmitted from the computer to your printer through a printer cable. The printer cable is not provided with the printer. Follow your computer instructions to attach the printer cable to your computer.

Setup Switches

Your printer comes equipped with two groups of setup switches which change how your printer performs certain functions. These switches are located inside your printer on the circuit board. On some models, Switch Group 1 is the one closest to the platen and Switch Group 2 is closest to the front of the printer. On other models, Switch Group 1 is on the left and Switch Group 2 is on the right. Examples of both models are shown below. There are eight switches in Switch Group 1, six switches in Switch Group 2.



When your printer is shipped, all of the switches are in the *off* (default) position. To change the settings, slide the switch to the alternate setting with the tip of a pen. (Do *not* use a pencil.)

Note: Commands in your software program override switch settings.

Switch Group 1 (Eight Switches)

The settings for Switch Group 1 (eight switches) are as follows:

Switch Number	Function	Switch Off (Set at Factory)	Switch On
1	Character set: Selects character set 1 or 2. (See below.)	Character set 1	Character set 2
2	Command alteration.	See following explanation.	
3	Skip perforation: Automatically skips one inch for perforations in paper.	Does not skip.	Skips
4 and 5	Sets form/page length.	See following explanation.	
6	Line feed: Paper automatically feeds one line after carrier return.	No line feed after return.	Paper advances with each return
7	Sets line spacing.	6 lines per inch	8 lines per inch
8	Reserved. Switch should be set off.		

Switch 1, Character Set

Refer to your software instructions for more information about the character set option.

Switch 2, Command Alteration

The primary function of this switch is to cause an automatic carrier return after a line feed, vertical tab, or ESC J command. Also, when switch 2 is on, the default right margin is set to 8 inches. In addition, this switch changes the number of bytes that are discarded when an ESC @ command is received: three bytes when the switch is off, two bytes when it is on.

Switches 4 and 5, Page Length

These two switches work together to change the length of the page. The chart below summarizes these switch settings.

When . . .	Page length is	Lines Per Page	
		6 LPI	8 LPI
Both switches are off	11.00 inches	66	88
4 is off, 5 is on	11.625 inches	70	93
4 is on, 5 is off	12.00 inches	72	96
Both switches are on	14.00 inches	84	112

Switch Group 2 (Six Switches)

The settings for Switch Group 2 (six switches) are as follows:

Switch Number	Function	Switch Off (Set at Factory)	Switch On
1	Selects embedded or pluggable font. (See following explanation.)	Embedded font	Pluggable font
2 and 3	Font selection	See following explanation.	
4	Font emulation	See following explanation.	
5 and 6	Sets print mode	See following explanation.	

Switch 1, Embedded/Pluggable Font Selection

The IBM "Quietwriter" III Printer is shipped from the factory with Switch 1 in the *off* position. The printer will print from the embedded font. Set Switch 1 *on* to print from pluggable fonts.

To choose a *particular* font from either the embedded or pluggable fonts, you must set switches 2 and 3.

Switches 2 and 3, Specific Font Selection

Switches 2 and 3 are used to select a specific font from the embedded fonts if switch 1 is off, or from a pluggable font if switch 1 is on.

Embedded Fonts

Your printer has four embedded fonts. Switches 2 and 3 are set at the factory so that your printer uses font 1, the 10-pitch Courier font, automatically (by default). To change the font your printer selects automatically, use the following chart to set switches 2 and 3.

When . . .	Font selected is
Both switches are off	Font 1 (Courier 10 pitch)
2 is off, 3 is on	Font 2 (Courier 12 pitch)
2 is on, 3 is off	Font 3 (Courier 17 pitch)
Both switches are on	Font 4 (Boldface – proportional space)

Pluggable Fonts

Pluggable font cartridges are labeled so you can tell which fonts they contain. Each cartridge contains four fonts. Below is a sample label from a pluggable cartridge.



Decide which font you want to print and then use the chart below to set switches 2 and 3 to print with that font.

When . . .	Font selected is
Both switches are off	Font 1
2 is off, 3 is on	Font 2
2 is on, 3 is off	Font 3
Both switches are on	Font 4

Switch 4, Font Emulation

The font emulation switch allows the “change font” command (ESC I) to work with the IBM Quietwriter® III Printer similarly to the way it works with the IBM Quietwriter® Printers 5201-001 and 5201-002.

Switch 4 ON

When switch 4 is *on* and the IBM Quietwriter® III Printer receives a “change font” command (ESC I), the printer will switch between embedded and pluggable fonts similar to the way the IBM “Quietwriter” Printers 5201-001 and 5201-002 switch between font holder “A” and font holder ★.

When using the font emulation mode, *switch 1* in Switch Group 2 should always be *off*. When *switch 1* is *off* and an ESC I command is received by the printer, the printer will change from *embedded* fonts to *pluggable* fonts. The font selected will be the last one used or selected in embedded mode. For example, if the active font in the embedded mode was Courier 12 (position 2), then position 2 will be selected in the pluggable font. If the position selected does not exist in the pluggable font (for example a download font), font position 1 is selected in the pluggable font.

The SI, DC2, ESC: and ESC P commands are ignored when switch 4 is on.

Switch 4 OFF

When switch 4 is *off*, the ESC I command will be used to change print modes and to select individual fonts *within* either the embedded or pluggable fonts.

Switches 5 and 6, Print Mode

Switches 5 and 6 work together. The table below explains how to combine switch settings to produce different print mode settings on your printer. For example, if you use the draft setting most often, you can change the switch settings as shown below. Then each time you turn the printer on, the print mode will be in the draft setting.

When . . .	Print mode is
Both switches are off	Quality mode
5 is off, 6 is on	Draft mode
5 is on, 6 is off	Enhanced mode

Print Quality

The quality of your printed documents depends on:

- **Print mode selected (Draft, Quality, Enhanced).** Selecting Draft over Quality or Quality over Enhanced will maximize print speed and minimize ribbon usage.
- **Type of paper used.** Smooth papers yield the best print quality. For rough papers, the Enhanced mode should be used if improved print quality is needed. If you are printing on transparencies, see "Transparencies" on page 5-13.
- **The condition of the printhead.** The printhead will need to be replaced periodically depending on how much you use the printer. A worn printhead can cause poor print quality. For more information, see "Changing the Printhead" on page 5-5.
- **Ink accumulation on the platen.** Clean the platen with a cloth dampened with isopropyl alcohol.
- **"Dirt" on the brown felt pad on the ribbon carrier, the ribbon feed rollers, and the cardholder.** This accumulated dirt may cause print quality problems (tops and bottoms of characters missing). In extreme cases the ribbon may become wrinkled, folded or even break. To remove accumulated dirt from the rollers and cardholder see "Cleaning the Cardholder and Ribbon Feed Rollers" on page 5-8. To replace the felt pad (supplied with each printhead) see "Changing the Brown Felt Pad" on page 5-8.
- **Printer environment.** Use the contrast control switch to adapt the printer to its environment. Set the control higher when the climate is dry, lower when it is moist. However, to maximize printhead life, set the control to the lowest possible setting that yields acceptable quality. For information on setting the contrast control switch, see "Adjusting the Contrast Control" on page 4-13.

Note: To prolong the life of the printhead, set the contrast control to the lowest possible setting that yields acceptable quality.

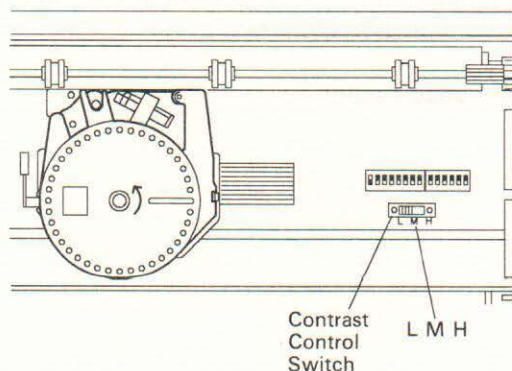
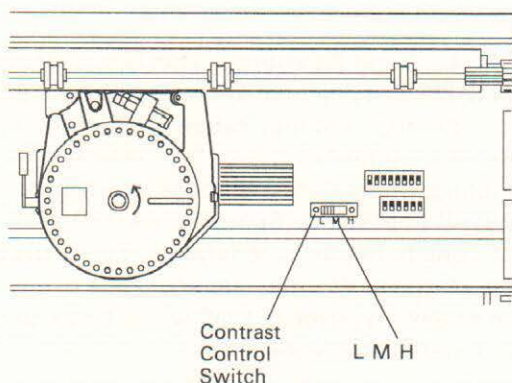
Contrast Control

The contrast control is a three-position switch located in front of or to the left of the setup switches inside your printer on the circuit board. The contrast control allows you to change the intensity of the printing to allow for changes in paper, ribbons, or climate. The three positions are marked L (low), M (medium) and H (high). Set the control higher when the climate is dry, lower when it is moist.

Note: Use the lowest setting necessary to attain the desired print quality and to prolong the life of the printhead.

Adjusting the Contrast Control

1. Open the printer cover.
2. Move the switch to the left to make the printing lighter, to the right to make it darker.



Printer Commands

You can send additional commands from your computer to your printer to control your printer's operation. Some of these commands are single codes and are called printer control codes. Others combine several codes or characters and are called escapement sequences.

On the following pages you will find:

- A Quick Reference section of charts which lists the control codes and escapement sequences by major printer function; for example, horizontal movement commands. You may want to keep this section handy for future reference.
- A Printer Control Code and Escape Sequence section which lists each control and escapement sequence in ASCII decimal numeric order.

Note: For IBM BASICA 2.0 and 2.1 users: This BASIC version traps the code point X'1A" and does not allow it to be sent across the parallel bus to the printer. This may cause problems in commands such as: Set Horizontal Tab Stops, Set Vertical Tab Stops, Bit Image Printing, Character Font Image Download, Print Next Character, Print All Characters, Space Forward, Space Backward, Set Page Length, Set Skip Perforation, Set Horizontal Margins, Set Vertical Margins. You may have to use a different command sequence or use a version of DOS which has a BASICA release level of 1.0, 1.1, or 3.0 or higher.

- A Printer Table section which illustrates the code point and character relationship for the embedded fonts.
- A Programming Reference section.

Note: When the printer is initialized, it is returned to its default conditions. The default conditions may be altered by the position of the printer setup switches. See "Setup Switches" on page 4-6. The printer is initialized when the printer Power switch is turned on, when the printer initialization interface signal (INIT) in the parallel interface is activated by the host computer, or when the printer is reset with the **Code** and **Reset** buttons on the printer front panel.

Quick Reference

Text Print Modes

Command	Dec	Function	Page
SO	14	Begin Double-Wide Printing by Line	4-23
DC4	20	End Double-Wide Printing by Line	4-24
ESC -	45	Begin/End Underline Mode	4-25
ESC E	69	Begin Horizontal Emphasized Printing	4-30
ESC F	70	End Horizontal Emphasized Printing	4-30
ESC G	71	Begin Vertical Emphasized Printing	4-31
ESC H	72	End Vertical Emphasized Printing	4-31
ESC I	73	Select Print Quality or Font	4-31
ESC S	83	Begin Subscript/Superscript Mode	4-40
ESC T	84	End Subscript/Superscript Mode	4-40
ESC W	87	Begin/End Continuous Double Wide Printing	4-40

Bit Image Print Modes

Command	Dec	Function	Page
ESC K	75	Normal Density Bit Image	4-34
ESC L	76	Dual Density Bit Image	4-35
ESC Y	89	Dual Density Bit Image	4-42
ESC Z	90	High Density Bit Image	4-42
ESC n	110	Select Aspect Ratio	4-54

Font Selection

Command	Dec	Function	Page
SI	15	Select 17-Pitch Font	4-23
DC2	18	Select 10-Pitch Font	4-23
ESC 6	54	Select Character Set 2	4-26
ESC 7	55	Select Character Set 1	4-26
ESC :	58	Select 12-Pitch Font	4-27
ESC =	61	Character Font Image Download	4-27
ESC I	73	Select Print Quality or Font	4-31
ESC P	80	Select Proportional Spacing Font	4-38
ESC \	92	Print All Characters	4-52
ESC ^	94	Print Next Character	4-52
ESC [I	73	Select Font	4-46
ESC [T	84	Select Code Page	4-49

Horizontal Movement

Command	Dec	Function	Page
BS	8	Backspace	4-20
HT	9	Horizontal Tab	4-21
CR	13	Carrier Return	4-22
SP	32	Space	4-24
ESC D	68	Set Horizontal Tab Stops	4-29
ESC R	82	Reset All Tabs	4-39
ESC d	100	Space Forward	4-53
ESC e	101	Space Backward	4-53

Vertical Movement

Command	Dec	Function	Page
LF	10	Line Feed	4-21
VT	11	Vertical Tab	4-21
FF	12	Form Feed	4-22
ESC B	66	Set Vertical Tab Stops	4-28
ESC J	74	Variable Line Feed	4-33
ESC R	82	Reset All Tabs	4-39
ESC]	93	Reverse Line Feed	4-52

Line Spacing

Command	Dec	Function	Page
ESC 0	48	Set 1/8 Inch Line Spacing	4-25
ESC 1	49	Set 7/72 Inch Line Spacing	4-25
ESC 2	50	Activate Variable Line Spacing	4-25
ESC 3	51	Set Graphics Line Spacing	4-25
ESC A	65	Set Variable Line Spacing	4-28
ESC [\	92	Set Vertical Units	4-50

Page Format

Command	Dec	Function	Page
ESC 4	52	Set Top of Form	4-26
ESC C	67	Set Page Length in Lines	4-29
ESC C 0	0	Set Page Length in Inches	4-29
ESC N	78	Set Skip Perforation	4-37
ESC O	79	Reset Skip Perforation	4-37
ESC X	88	Set Horizontal Margins	4-41
ESC [F	70	Select Sheetfeed Options	4-45
ESC [S	83	Set Vertical Margins	4-48

Printer Control

Command	Dec	Function	Page
NUL	0	Null	4-20
BEL	7	Bell (Beeper)	4-20
ESC	27	Command Prefix	4-24
ESC 5	53	Begin/End Auto Line Feed Mode	4-26
ESC I	73	Select Print Quality or Font	4-31
ESC Q	81	Deselect Printer	4-39
DC1	17	Select Printer	4-23
ESC j	106	Stop	4-53
ESC [F	70	Select Sheetfeed Options	4-45

Printer Control Codes and Escape Sequences

This section describes the control codes, followed by the escapement sequences, in ASCII decimal numeric order. The first line of each command contains the command abbreviation and a descriptive title. If the command is an escapement sequence which requires parameters, the next line will identify the sequence of characters and parameters which are required for a complete command. Following this line is a discussion of the command, how it functions, and the purpose or meaning of each parameter. Each command ends with an example of an IBM Personal Computer BASIC program statement which shows you how to use the command.

Control Codes

NUL **Null**

As a control, this code point is ignored by the printer.

This code point is also used to end the parameter list for the ESC B (Set Vertical Tab Stops) and ESC D (Set Horizontal Tab Stops) commands.

```
LPRINT CHR$(0);
```

BEL **Bell**

The BEL command sounds the printer beeper.

```
LPRINT CHR$(7);
```

BS **Backspace**

This command moves the print position left one print column. The leftward motion is bounded by the left margin.

```
LPRINT CHR$(8);
```

HT Horizontal Tab

The HT command causes the printer to tab to the next horizontal tab stop.

Tab stops are referenced in print columns from column one. Column width varies with font pitch. The tab control is ignored if no tab stops are set. Tabs may be set with the ESC D (Set Horizontal Tab Stops) command. When the printer is turned on or when an ESC R (Reset All Tabs) command is processed, tabs are set to every eight columns, beginning with column 9.

```
LPRINT CHR$(9);
```

LF Line Feed

The LF command advances the paper up one line space based on the currently active line-spacing increment.

The printer's basic index unit is 1/240 inch. If the line-spacing increment is specified in units other than 1/240, the printer continually adjusts the vertical position to the nearest 1/240th inch. The line-spacing increment may be changed by one or a combination of the following commands: ESC A, ESC 0, ESC 1, ESC 2, ESC 3 and/or ESC [\. A line feed operation, which would cause the next line to fully print in the skip perforation or bottom margin zone will cause the printer to advance the paper to the top margin of the next page. The horizontal printing position is not affected by this command unless setup switch 2 in Switch Group 1 is set to the ON position. If the switch is ON, the horizontal printing position is returned to the left margin. For cut sheet paper, the page is ejected when the top edge of the next line exceeds the page length. The next page feeds when the printer is ready to print the next line.

```
LPRINT CHR$(10);
```

VT Vertical Tab

The VT command advances the paper up to the next vertical tab stop.

Vertical tab stops are referenced in print lines from the top of form which is print line one. The distance from the top of form is based on the currently active line spacing and the line number of the vertical tab stop. The last valid tab stop for a given page is the one which is less than the currently active bottom margin or page length. If the last tab stop is less than or equal to the current line position, then the vertical tab command acts as a line feed command. If no vertical tab stops are set, the paper is advanced one line space. Vertical tab stops are set by using the ESC B command. Vertical tab stops are reset when the printer is turned on or when an ESC R command is processed.

```
LPRINT CHR$(11);
```

FF Form Feed

The FF command advances the paper to the top of form or top margin of the next page.

The print position is returned to the left margin. The paper advance is based on the currently active page length or the trailing edge of the paper. Continuous paper is assumed if the paper is advanced a distance equal to the page length and the trailing edge of the paper is not sensed. For cut sheet applications, the page is ejected but the next page is not fed or requested until the printer is ready to print the next line.

```
LPRINT CHR$(12);
```

CR Carrier Return

The CR command returns the print position to the left margin on the same line.

No line feed operation occurs unless ESC 5 (Begin/End Auto Line Feed Mode) is active or setup switch 6 in Switch Group 1 is on.

Note: IBM Personal Computer BASIC adds a line feed to CHR\$(13). See the BASIC "Open Statement" for additional information.

```
LPRINT CHR$(13);
```


SO Begin Double-Wide Printing by Line

The SO command causes the printer to print characters, spaces, and backspaces double their normal width for one line. The column width used by the printer is not affected by the command. This mode is terminated by DC4, CR, VT, FF, ESC], ESC W, LF, or line wrap.

```
LPRINT CHR$(14);
```

SI Select 17-Pitch Font (Compressed Print Mode)

The SI command functions in two ways depending on the position of setup switch 4 in Switch Group 2.

1. When switch 4 is off, this command selects a 17-pitch font. The embedded Courier 17-pitch font is selected unless a pluggable font is being used and it contains a 17-pitch font. In this case, the selection will be made from the pluggable font cartridge.
2. When switch 4 is on, the command is recognized by the printer but no action is taken.

```
LPRINT CHR$(15);
```

DC1 Select Printer

This command returns the printer to a selected state after being deselected with the ESC Q (Deselect Printer) command.

```
LPRINT CHR$(17);
```

DC2 Select 10-Pitch Font

This command functions in two ways depending on the position of setup switch 4 in Switch Group 2.

1. When switch 4 is off, this command selects a 10-pitch font. The embedded Courier 10-pitch font is selected unless a pluggable font is being used and it contains a 10-pitch font. In this case the selection will be made from the pluggable font cartridge.
2. When switch 4 is on, the command is recognized by the printer but no action is taken.

```
LPRINT CHR$(18);
```


DC4 End Double-Wide Printing by Line

This command ends double-wide printing by line mode.

```
LPRINT CHR$(20);
```

ESC Command Prefix

The command prefix is used to introduce multiple-byte commands. The code point immediately following the ESC control identifies the command which in turn identifies the number of subsequent bytes of data which make up the command.

```
LPRINT CHR$(27);
```

SP Space

The SP command moves the print position right one print column.

```
LPRINT CHR$(32);
```

Escapement Sequences

ESC - Begin/End Underline Mode

ESC - n

ESC - (minus) followed by a parameter value of $n = 1$ (any ODD value) causes the printer to begin automatically underlining all subsequent characters, spaces, and space generated by the ESC d (Space Forward) command. Space generated by a horizontal tab is not underlined. A value of $n = 0$ (EVEN value) ends underline mode.

```
LPRINT CHR$(27);CHR$(45);CHR$(n);
```

ESC 0 Set 1/8 Inch Line Spacing

This command sets line spacing to 8 lines per inch.

```
LPRINT CHR$(27);CHR$(48);
```

ESC 1 Set 7/72 Inch Line Spacing

This command sets line spacing to 7/72 inch.

```
LPRINT CHR$(27);CHR$(49);
```

ESC 2 Activate Variable Line Spacing

ESC 2 is an activation command for ESC A (Set Variable Line Spacing). If no ESC A commands have been given, line spacing is set to 6 lines per inch.

```
LPRINT CHR$(27);CHR$(50);
```

ESC 3 Set Graphics Line Spacing

ESC 3 n

ESC 3 sets line spacing to n/g -units inches.

The default value for g-units is 216. The value of the g-units parameter may be altered by the ESC [\ (Set Vertical Units) command. The value of **n** must be between 1 and 255. For example, to set line spacing to 9/216 assuming g-units equal 216:

```
LPRINT CHR$(27);CHR$(51);CHR$(9);
```

ESC 4 Set Top of Form

This command sets the current vertical position as the top of form.

```
LPRINT CHR$(27);CHR$(52);
```

ESC 5 Begin/End Auto Line Feed Mode

ESC 5 **n**

The parameter **n** = 1 (any ODD value) causes the printer to automatically perform a line feed after each carrier return. The value **n** = 0 (zero or EVEN value) ends the auto feed mode. The initial state of this mode is determined by the position of setup switch 6 in Switch Group 1.

```
LPRINT CHR$(27);CHR$(53);CHR$(n);
```

ESC 6 Select Character Set 2

This command, in conjunction with ESC 7 (Select Character Set 1), is used to alter the printer's interpretation of code points 3 to 6, 21, and 128 to 159. When character set 2 is active, code points 3 to 6, 21, and 128 to 159 represent characters and symbols used in non-English languages. When character set 1 is active, the code points represent printer controls. See page 4-57. The initial character set selection is set by setup switch 1 in Switch Group 1.

```
LPRINT CHR$(27);CHR$(54);
```

ESC 7 Select Character Set 1

This command selects printer character set 1. For additional discussion see ESC 6 (Select Character Set 2).

```
LPRINT CHR$(27);CHR$(55);
```

ESC : Select 12-Pitch Font

This command functions in two ways depending on the position of setup switch 4 in Switch Group 2.

1. When switch 4 is off, this command selects a 12-pitch font. The embedded Courier 12-pitch font is selected unless a pluggable font is being used and it contains a 12-pitch font. In this case, the selection will be made from the pluggable font cartridge.
2. When switch 4 is on, the command is recognized by the printer but no action is taken.

```
LPRINT CHR$(27);CHR$(58);
```

ESC = Character Font Image Download

ESC = Ln Hn code n1 ... nk

This command is used to send a font image to the download font cartridge.

The **Ln** and **Hn** parameters specify the number of data bytes (code plus font image data bytes). The number of bytes is equal to 256 times **Hn** plus **Ln**. The *code* parameter which identifies the format of the data is predefined to be 21. Other data formats should not be sent to the printer. The font image data bytes are represented by **n1 ... nk**.

To effectively use this command requires one or more download cartridge(s) and the font files supplied with the Font Download Option. The font file contains the font image data bytes (**n1 ... nk**). These files are generally 16382 bytes in length.

```
LPRINT CHR$(27);CHR$(61);CHR$(Ln);CHR$(Hn)  
CHR$(21);CHR$(n1); ... CHR$(nk);
```


ESC A Set Variable Line Spacing

ESC A n

Escape A stores a line-spacing value which is activated by the ESC 2 (Activate Variable Line Spacing) command.

The value stored is n/t -units per inch, where the value of the t -units parameter is set by ESC [\ (Set Vertical Units). When the printer is turned on, n/t -units is set to $12/72$ -inch. The valid range for n is 1 to 255. For example, to change line spacing to 3 lines per inch, the first LPRINT stores a value of $24/72$, assuming that t -units equals 72. The second LPRINT activates the stored value.

```
LPRINT CHR$(27);CHR$(65);CHR$(24);
```

```
LPRINT CHR$(27);CHR$(50);
```

ESC B Set Vertical Tab Stops

ESC B n1 n2 nk 0

The n 's in the format above are used to indicate tab stop positions which are referenced in print lines from the top of form which is line one. Values of n between 1 and 255 are valid. Tab stop numbers which are not in ascending numerical order are discarded. The first 16 valid tab stops are stored. Additional tab stops are discarded. A zero value terminates the tab sequence. ESC B followed only by 0 or ESC R may be used to clear vertical tab stops. Vertical tabs stops are also cleared when the printer is initialized. For example, to set tabs at 10, 20, and 40:

```
LPRINT CHR$(27);CHR$(66);CHR$(10);  
CHR$(20);CHR$(40);CHR$(0);
```

ESC C Set Page Length in Lines

ESC C n

The value **n** specifies the page length in lines.

This length is converted to inches based on the currently active line spacing. The maximum length which may be specified is 45 inches. Lengths greater than 45 inches will result in a page length of 45.5 inches. A value of zero is used to set page length in inches. (See the next command.) This command sets the current vertical position as the top of form and cancels the top and bottom margin and skip perforation modes. When the printer is initialized, the default page length is based on the position of setup switches 4 and 5 in Switch Group 1. For example, to set the page length to 55 lines:

```
LPRINT CHR$(27);CHR$(67);CHR$(55);
```

ESC C 0 Set Page Length in Inches

ESC C 0 m

The value **m** specifies the page length in inches.

The maximum length which may be specified is 45 inches. Lengths greater than 45 inches will result in a page length of 45.5 inches. A value of zero is invalid and the command is ignored. This command sets the current vertical position as the top of form, and cancels the top and bottom margin and skip perforation modes. When the printer is initialized, the default page length is based on the position of switches 4 and 5 in Switch Group 1. For example, to set the page length to 10 inches:

```
LPRINT CHR$(27);CHR$(67);CHR$(0);  
CHR$(10);
```

ESC D Set Horizontal Tab Stops

ESC D n1 n2 ... nk 0

The **n**'s in the above format indicate the tab stops in print columns which are referenced from column one. The first 28 values of **n** between 1 and 255 are stored. Additional tab stops are discarded.

Tab stop values which are not in ascending numerical order are discarded. The zero value terminates the tab stop sequence. ESC D followed by 0 will clear all tab stops. Tabs are set in every eight columns beginning with column 9 when the printer is initialized or an ESC R command is processed. For example, to set horizontal tab stops in printer column positions 10, 20, and 40:

```
LPRINT CHR$(27);CHR$(68);CHR$(10);  
CHR$(20);CHR$(40);CHR$(0);
```

ESC E Begin Horizontal Emphasized Printing

ESC E changes the printer to horizontal emphasized printing mode. This mode is used to simulate the appearance of text which is printed in emphasized mode on a wire matrix printer. Text is emphasized by expanding each character slightly in the horizontal direction within its assigned character position to give it a bolder or darker appearance. Vertical and horizontal emphasized printing modes may be combined to enlarge the character in both the vertical and horizontal direction. This gives the character an even bolder or darker appearance. Horizontal emphasized printing is ended by the ESC F (End Horizontal Emphasized Printing) command or when the printer is initialized.

```
LPRINT CHR$(27);CHR$(69);
```

ESC F End Horizontal Emphasized Printing

This command ends horizontal emphasized printing mode started by the ESC E (Begin Horizontal Emphasized Printing) command.

```
LPRINT CHR$(27);CHR$(70);
```


ESC G Begin Vertical Emphasized Printing (Double Strike)

ESC G changes the printer to vertical emphasized printing mode. This mode is used to simulate the appearance of double strike text which is printed on a wire matrix printer. Each text character is expanded slightly in the vertical direction within its assigned printing position to give it a bolder or darker appearance. Vertical and horizontal emphasized printing modes may be combined to enlarge the character in both the vertical and horizontal direction. This gives the character an even bolder or darker appearance. Vertical emphasized printing mode is ended by the ESC H (End Vertical Emphasized Printing) command or when the printer is initialized.

```
LPRINT CHR$(27);CHR$(71);
```

ESC H End Vertical Emphasized Printing (Double Strike)

This command ends the vertical emphasized printing mode started by the ESC G (Begin Vertical Emphasized Printing) command.

```
LPRINT CHR$(27);CHR$(72);
```

ESC I Select Print Quality or Font

ESC I n

This command functions in two ways depending on the position of setup switch 4 in Switch Group 2.

1. Switch 4 OFF

When setup switch 4 in Switch Group 2 is OFF, this command is used to change the print mode (quality of print) and to select a font from the embedded fonts or from the pluggable font cartridge.

The value of **n** identifies the function to be performed. (See the following table.) Unsupported values of **n** are ignored. If a pluggable font is selected but is not installed, the printer beeps, the **Font** light comes on, and the **Ready** light goes off.

n	Function
0	Returns the printer to the power-on default print mode and font selection based on the positions of the appropriate setup switches in Switch Group 2.
1	Select Draft print mode
2	Select Quality print mode
3	Select Enhanced print mode
32	Select embedded Courier 10 font
33	Select embedded Courier 12 font
34	Select embedded Courier 17 font
35	Select embedded Boldface font
64	Select pluggable font 1
65	Select pluggable font 2
66	Select pluggable font 3
67	Select pluggable font 4

2. Switch 4 ON

When setup switch 4 in Switch Group 2 is ON, this command will switch between an embedded font and a pluggable font similar to the way the IBM "Quietwriter" Printers 5201-001 and 5201-002 switch between font holder A and font holder ★.

When the parameter value **n** = 0 (zero or any EVEN value) the font is selected from the embedded fonts. When the parameter value is 1 (ODD value), the font is selected from the pluggable font cartridge. The font is selected based on the position (1, 2, 3, or 4) of the currently active embedded font. If the pluggable font cartridge does not contain a font for the currently active position (for example, a download font) then font position 1 is chosen in the pluggable font. When switch 4 is *on*, the default font position (after printer initialization) is set by switches 2 and 3 in Switch Group 2. When switch 4 is *on*, the embedded font should *always* be selected after the printer initializes. It is recommended that switch 1 in Switch Group 2 be set to the *off* position whenever switch 4 is *on*.

When switch 4 is *on*, the commands to alter the font style and code pages (ESC [I and ESC [T, respectively) are *not* recommended since these commands are not supported in the IBM "Quietwriter" 5201 printer being emulated. If these commands

are used, printing should always start with an embedded font after the commands are issued.

Font Position	n = Even Embedded Font	n = Odd Electronic Font III	n = Odd Download Font
1	Courier 10	Font 1	Font 1
2	Courier 12	Font 2	Font 1
3	Courier 17	Font 3	Font 1
4	Boldface	Font 4	Font 1

```
LPRINT CHR$(27);CHR$(73);CHR$(n);
```

ESC J Variable Line Feed

ESC J n

This command advances the paper n/g-units inches.

The value of the g-units parameter is set by ESC [\ (Set Vertical Units) command. When the printer is turned on, g-units defaults to 216. The valid range for n is 1 to 255. This command does not affect the line-spacing increment used by the line feed control. The printer's basic index unit is 1/240 inch. If the variable line feed is specified in units other than 1/240, the printer continually adjusts the vertical position of the printer to the nearest 1/240th inch. The horizontal printing position is not affected by this command unless setup switch 2 in Switch Group 1 is in the ON position. If the switch is ON, the horizontal printing position is returned to the left margin. The paper advance is unaffected by skip perforation and top and bottom margins. For cut sheet paper, the page is ejected when the top edge of the next line exceeds the page length. When the next line is ready to be printed, the next page is loaded or requested and the line is printed at the top edge of the page.

```
LPRINT CHR$(27);CHR$(74);CHR$(n);
```

ESC K Normal Density Bit Image

ESC K Ln Hn n1 n2 ... nk

This command changes the printer from text to bit image printing with a horizontal dot density of 60 dots per inch (dpi). Each data byte (**nk**) represents one column of 8 dots. The vertical dot density is determined by the active horizontal-to-vertical aspect ratio. The aspect ratio is selected by the ESC n (Select Aspect Ratio) command. The default aspect ratio is 5:6. The number of bit image data bytes printed is equal to 256 times **Hn** plus **Ln**. All text printing modes are suspended by the bit image printing mode. Bit image commands and text may be mixed on the same line. The printer ignores any bit image data which would print beyond the right margin or more than 792 bytes for a line length of 13.2 inches.

5:6 Aspect Ratio: When this aspect ratio is active, the printer assumes a horizontal dot density of 60 dpi and a vertical dot density of 72 dpi. Since the printhead used by the printer is 1/6 inch high and has 40 electrodes, the printers vertical dot density is 240 dpi. To simulate a vertical dot density of 72 dpi requires the printer to assign 3 and 4 vertical printer electrodes to each data bit (vertical dot) as defined in the following table.

Data Byte Bit Number	Number of Electrodes	Print Electrode Position
7 Top	3	1 - 6 Top
6	4	7 - 9
5	3	10 - 13
4	3	14 - 16
3	4	17 - 19
2	3	20 - 23
1	3	24 - 26
0 Bottom	4	27 - 29
		30 - 33
		34 - 40 Bottom

1:1 Aspect Ratio: When this aspect ratio is active, the printer assumes a horizontal and vertical dot density of 60 dpi. The bit-to-electrode assignment is given in the following table.

Data Byte Bit Number	Number of Electrodes	Print Electrode Position
7 Top	4	1 - 4 Top
6	4	5 - 8
5	4	9 - 12
4	4	13 - 16
3	4	17 - 20
2	4	21 - 24
1	4	25 - 28
0 Bottom	4	29 - 32 Bottom

The following example is for 5:6 Aspect Ratio and would produce the graphic symbol .

```
LPRINT CHR$(27);CHR$(75);CHR$(8);CHR$(0);
CHR$(255);CHR$(127);CHR$(63);
CHR$(31);CHR$(15);CHR$(7);
CHR$(3);CHR$(1);
```

ESC L Dual Density Bit Image

ESC L Ln Hn n1 n2 ... nk

This command changes the printer from text to bit image printing at a horizontal dot density of 120 dpi. Each data byte (**nk**) represents one column of eight dots. The vertical dot density is determined by the active horizontal-to-vertical aspect ratio. The aspect ratio is selected by the ESC n command. The default aspect ratio is 5:6. The number of bit image data bytes printed is equal to 256 times **Hn** plus **Ln**. All text printing modes are suspended by the bit image printing mode. Bit image commands and text may be mixed on the same line. The printer ignores any bit image data which would print beyond the right margin or more than 1584 bytes for a line length of 13.2 inches.

5:6 Aspect Ratio: When this aspect ratio is selected, the printer assumes a horizontal dot density of 120 dpi and a vertical density of 72 dpi. For a complete discussion, see the description for the 5:6 aspect ratio in the ESC K (Normal Density Bit Image) command.

1:1 Aspect Ratio: When this aspect ratio is selected, the printer assumes a horizontal and vertical dot density of 120 dpi. The bit-to-electrode assignment is given in the following table. At this aspect ratio, a data byte would use only 16 of the 40 available vertical printing electrodes. To improve performance and reduce ribbon usage, two consecutive ESC L (Dual Density Bit Image) commands will be combined, when possible, by the printer into one print operation. To guarantee scan accumulation, the following conditions must be satisfied:

- Line spacing set to 16/240 inch.
- Consecutive graphics ESC L commands must be separated by one CR and one LF command.
- Each ESC L command must begin at the left margin.
- The number of bit image data bytes represented by each ESC L command must be the same.
- The print line length represented by the bit image data bytes must not exceed the right margin or 13.2 inches.
- Each ESC L command must not be separated by more than one second.

Data Byte Bit Number	Number of Electrodes	Print Electrode Position	Command
7 Top	2	1 - 2 Top	One
6	2	3 - 4	
5	2	5 - 6	
4	2	7 - 8	
3	2	9 - 10	
2	2	11 - 12	
1	2	13 - 14	
0 Bottom	2	15 - 16 Bottom	
7 Top	2	17 - 18 Top	Two
6	2	19 - 20	
5	2	21 - 22	
4	2	23 - 24	
3	2	25 - 26	
2	2	27 - 28	
1	2	29 - 30	
0 Bottom	2	31 - 32 Bottom	

The following example is for 5:6 Aspect Ratio and would produce the graphic symbol .

```
LPRINT CHR$(27);CHR$(76);CHR$(16);CHR$(0);  
CHR$(255);CHR$(255);CHR$(127);  
CHR$(127);CHR$(63);CHR$(63);  
CHR$(31);CHR$(31);CHR$(15);  
CHR$(15);CHR$(7);CHR$(7);CHR$(3);  
CHR$(3);CHR$(1);CHR$(1);
```

ESC N Set Skip Perforation

ESC N n

ESC N activates the skip perforation function.

The parameter **n** sets the value for the number of lines to be skipped. The value is converted to inches based on the currently active line spacing. The valid range for **n** is 1 to 255. A value of zero causes the command to be ignored. If the skip perforation function is active, it will remain active. A value greater than the page length will cause the skip perforation to be reset. ESC N is canceled anytime the page length is changed or vertical margins are set. The initial state of skip perforation is a function of the position of setup switch 3 in Switch Group 1. If the switch is on, a default skip perforation zone of 1 inch is assumed when the printer is initialized.

The example shows a 12-line skip perforation. This will print 54 lines and feed the paper 12 lines for a page length of 66 lines.

```
LPRINT CHR$(27);CHR$(78);CHR$(12);
```

ESC O Reset Skip Perforation

This command resets both skip perforation and top and bottom margins set by the ESC [S command.

```
LPRINT CHR$(27);CHR$(79);
```

ESC P Select Proportional Spacing Font

ESC P n

This command functions in two ways depending on the position of setup switch 4 in Switch Group 2.

1. When switch 4 is off, the parameter value **n**=1 (any odd value) causes the printer to select a proportional space font. The embedded proportional space font (Boldface) is selected unless a pluggable font is being used and it contains a proportional space font. In this case, the selection will be made from the pluggable font cartridge. A value of **n**=0 (zero or even value) causes the printer to return to the previously active pitch or font when setup switch 4 is off. Proportional space printing is terminated by another pitch selection command (SI, DC2, or ESC :), an ESC I (Select Print Quality or Font) command, or an ESC [I (Select Font) command.
2. When switch 4 is on, the command is recognized by the printer but no action is taken regardless of the parameter value of **n**.

```
LPRINT CHR$(27);CHR$(80);CHR$(n);
```

ESC Q Deselect Printer

ESC Q n

This command is intended for diagnostic applications to query the identity of the attached printer.

If **n** = 21, the printer will enter a deselected state. The printer will ignore all data sent to it until a DC1 (Select Printer) command is received. The SLCT signal in the parallel interface is electrically conditioned to an inactive state indicating that the printer has received the parameter value of 21 before the BUSY signal. All other parameter values are ignored.

```
LPRINT CHR$(27);CHR$(81);CHR$(21);
```

ESC R Reset All Tabs

This command sets horizontal tabs every 8 columns, beginning with column 9, and clears all vertical tabs.

```
LPRINT CHR$(27);CHR$(82);
```


ESC S Begin Subscript/Superscript Mode

ESC S n

A parameter value **n** = 0 (zero or any EVEN value) sets the printer in superscript mode. The printer will print characters one-half the normal height in the upper half of the normal character position. A parameter value **n** = 1 (ODD value) sets the printer in subscript mode. The printer will print characters one-half the normal height in the lower half of the normal character position. Subscript or superscript mode remains active until it is reset by the **ESC T** (End Subscript/Superscript Mode) command or the printer is initialized.

```
LPRINT CHR$(27);CHR$(83);CHR$(n);
```

ESC T End Subscript/Superscript Mode

ESC T ends Subscript/Superscript printing mode.

```
LPRINT CHR$(27);CHR$(84);
```

ESC W Begin/End Continuous Double-Wide Printing

ESC W n

ESC W followed by a parameter value of **n** = 1 (any ODD value) activates the continuous double-wide printing mode. Continuous double-wide printing mode resets double wide line mode which is initiated by the **SO** (Begin Double-Wide Printing by Line) command.

The mode remains active until it is ended by an **ESC W** command followed by a parameter value of **n** = 0 (zero or EVEN value) or when the printer is initialized. This command also resets double-wide printing previously begun by an **SO** command.

```
LPRINT CHR$(27);CHR$(87);CHR$(n);
```

ESC X Set Horizontal Margins

ESC X m n

The parameter value **m** represents the left margin and **n** represents the right margin. The margins are specified in print positions and converted to a horizontal position in inches based upon the currently active pitch. The value of **m** must be greater than or equal to 1 and less than or equal to the maximum value given in the table below. If these limits are exceeded, the left margin is set to 1. The value of **n** must be greater than or equal to **m** and less than or equal to the maximum value given in the table below. If these values are exceeded, the right margin is set to the maximum limit.

Pitch	Maximum Values	
	m	n
10	129	132
12	154	158
15	193	198
17	221	226
PS	154	158

The previous margin values (in inches) are used if a value of zero is used for **m** or **n** respectively. The CR control will return the print position to the new left margin. The next character or bit image graphics command will be subject to the new right margin. If a character exceeds the right margin, it will be printed at the left margin of the next line. Bit image graphics data is truncated if it exceeds the right margin. When the printer is initialized, the left margin is set to 1 and the right margin is set to 8.0 or 13.2 inches, depending on the position of setup switch 2 in Switch Group 1. For example, to set the left margin at 10 and the right margin at 90:

```
LPRINT CHR$(27);CHR$(88);CHR$(10);  
        CHR$(90);
```

ESC Y Dual Density Bit Image

ESC Y Ln Hn n1 n2 nk

This command is processed in the same way as the ESC L (Dual Density Bit Image) command.

ESC Z High Density Bit Image

ESC Z Ln Hn n1 n2 ... nk


This command changes the printer from text to bit image printing at horizontal dot density of 240 dpi. Each data byte (**nk**) represents one column of 8 dots. The vertical dot density is determined by the active horizontal-to-vertical aspect ratio. The aspect ratio is selected by the ESC n command. The default aspect ratio is 5:6. The number of bit image data bytes printed is equal to 256 times **Hn** plus **Ln**. All text printing modes are suspended by the bit image printing mode. Bit image commands and text may be mixed on the same line. The printer ignores any bit image data which would print beyond the right margin or more than 3168 bytes for a line length of 13.2 inches.

5:6 Aspect Ratio: When this aspect ratio is selected, the printer assumes a horizontal dot density of 240 dpi and a vertical density of 72 dpi. For a complete discussion, see the description for the 5:6 aspect ratio in the ESC K (Normal Density Bit Image) command.

1:1 Aspect Ratio: When this aspect ratio is selected, the printer assumes a horizontal and vertical dot density of 240 dpi. The bit-to-electrode assignment is given in the following table. At this aspect ratio, a data byte would use only 8 of the 40 available vertical printing electrodes. To improve performance and reduce ribbon usage, four consecutive ESC Z commands will be combined, when possible, by the printer into one print operation. For guaranteed scan accumulation, the following conditions must be satisfied:

- Line spacing set to 8/240 inch.
- Consecutive graphics ESC Z commands must be separated by one CR and one LF command.
- Each ESC Z command must begin at the left margin.
- The number of bit image data bytes represented by each ESC Z command must be the same.
- The print line length represented by the bit image data bytes must not exceed the right margin or 13.2 inches.
- Each ESC L command must not be separated by more than one second.

Data Byte Bit Number	Number of Electrodes	Print Electrode Position	Command
7 Top	1	1 Top	One
6	1	2	
5	1	3	
4	1	4	
3	1	5	
2	1	6	
1	1	7	
0 Bottom	1	8 Bottom	
7 Top	1	9 Top	Two
6	1	10	
5	1	11	
4	1	12	
3	1	13	
2	1	14	
1	1	15	
0 Bottom	1	16 Bottom	
7 Top	1	17 Top	Three
6	1	18	
5	1	19	
4	1	20	
3	1	21	
2	1	22	
1	1	23	
0 Bottom	1	24 Bottom	
7 Top	1	25 Top	Four
6	1	26	
5	1	27	
4	1	28	
3	1	29	
2	1	30	
1	1	31	
0 Bottom	1	32 Bottom	

The following example is for 5:6 Aspect Ratio and would produce the graphic symbol .

```
LPRINT CHR$(27);CHR$(90);CHR$(32);CHR$(0);
CHR$(255);CHR$(255);CHR$(255);
CHR$(255);CHR$(127);CHR$(127);
CHR$(127);CHR$(127);CHR$(63);
CHR$(63);CHR$(63);CHR$(63);CHR$(31);
CHR$(31);CHR$(31);CHR$(31);CHR$(15);
CHR$(15);CHR$(15);CHR$(15);CHR$(7);
CHR$(7);CHR$(7);CHR$(7);CHR$(3);
CHR$(3);CHR$(3);CHR$(3);CHR$(1);
CHR$(1);CHR$(1);CHR$(1);
```

ESC [F Select Sheetfeed Options

ESC [F Ln Hn pft fc sd

This command is used to specify the device settings for the automatic sheetfeed paper handling option.

This command is used to establish paper handling modes and to select paper handling options. The command specifies device settings and does not cause paper motion to occur. When data is ready to be printed, the printer will automatically load a sheet of paper based on the currently active paper handling device settings. A form feed command will cause the page to be ejected but the next page will not load until the printer is ready to print. A line feed command, which causes the page length to be exceeded, will also cause the page to eject and delay the loading of the next page.

The parameter values of **Ln** and **Hn** specify the number of bytes of parameters which follow. The number of parameter bytes is 256 times **Hn** plus **Ln**.

The **pft** parameter is a single-byte parameter which is used to specify the paper feeding technique. When **pft** = 1, the printer will stop, allowing the operator to manually insert one or more sheets of paper. When **pft** = 3, the printer is restored to automatic sheet feed mode of operation. All other values of **pft** will not change the paper feed technique. When the printer is initialized with an automatic sheetfeed attached, the printer defaults to automatic sheetfeed mode.

The **fc** parameter is used to specify the type of media (cut sheet paper) which is to be used. The supported parameters are a function of the sheetfeed option which is installed. See the Sheetfeed Guide To Operations for the supported parameter values. A parameter value of **fc** = 0 indicates that the current Forms Control is to remain unchanged. A value of **fc** = 1 indicates that cut sheet paper is to be used.

The **sd** parameter is used to specify the source drawer number. A value of zero indicates that the currently active source drawer is to be used. The supported parameters are a function of the sheetfeed option which is installed. See the Sheetfeed Guide To Operations for the the supported parameter values.

For example, to select automatic cut sheet feeding from sheet drawer one:

```
LPRINT CHR$(27);CHR$(91);CHR$(70);  
        CHR$(3);CHR$(0);  
        CHR$(3);CHR$(1);CHR$(1);
```

ESC [I Select Font

ESC [I Ln Hn Hfid Lfid Hfwd Lfwd fa

This command is used to select a font by font id.

The parameter values of **Ln** and **Hn** specify the number of bytes of parameters which follow. The number of parameter bytes is 256 times **Hn** plus **Ln**.

The **fid** parameter is a two-byte parameter which specifies the font id number of the font to be selected. The font id number is equal to 256 times **Hfid** plus **Lfid**. The font id numbers and font widths for the embedded fonts are given in the following table.

Note: The parameter order is high/low.

Font	fid H L	fwd H L	fa
Courier 10	000 011	000 144	01
Courier 12	000 085	000 120	01
Courier 17	000 254	000 084	01
Boldface	000 159	000 000	02

The id numbers for the fonts in the pluggable cartridges precede the font name on the cartridge label.



Font ID
Number

The **fwd** parameter is a two-byte parameter which specifies the font width in units of 1/1440 inches. The font width in inches is equal to 256 times **Hfwd** plus **Lfwd** divided by 1440. The font width for each embedded font is given in the table above. The most popular font widths and their corresponding pitch (characters per inch) are given in the following table.

Note: The parameter order is high/low.

fwd H L	Description
000 000	No Change
000 084	17 Pitch
000 096	15 Pitch
000 120	12 Pitch
000 144	10 Pitch

The **fa** is a one-byte parameter which specifies the spacing attribute of the font to be selected. A value of **fa** = 0 indicates that the previous value of the font attribute is to be used. A value of **fa** = 1 indicates that the request is for a fixed pitch font of **fwd** width. A value of **fa** = 2 indicates that the request is for a proportional spacing font. If the font width is zero, then a font width of 0.0833 inches (12 pitch) is assumed.

Note: When selecting a font with this command, make sure the code page attribute for the font matches the code page that was last selected in the printer. If the code page is different, select the proper code page (ESC [T command) before printing from the selected font.

If the attributes of the fonts currently in the printer do not match those being requested by this command, the printer beeps and stops printing, the **Ready** light goes off, and the **Font** light comes on. The correct font cartridge may be installed. If the correct cartridge is not available, pressing the **Start/Stop** button causes the printer to select a "best fit" font in the printer having the same code page. If the code page does not exist, then a "best fit" font will be selected. For example, to select the Courier 10- pitch font:

```
LPRINT CHR$(27);CHR$(91);CHR$(73);  
        CHR$(5);CHR$(0);  
        CHR$(0);CHR$(11);  
        CHR$(0);CHR$(144);CHR$(1);
```

ESC [S Set Vertical Margins

ESC [S Ln Hn Htm Ltm Hbm Lbm

This command is used to set top and bottom margins. The vertical margins are used to define both a top and bottom margin zone which is skipped when paper is advanced by the LF and FF controls. A line of print is considered to be in the print zone if the top edge of the line is between the top and bottom margins. The vertical margins are set inactive by the ESC C (Set Page Length) and ESC O (Reset Skip Perforation) commands or when the printer is initialized.

The parameter values **Ln** and **Hn** specify the number of bytes used to specify the top and bottom margin parameters. Use **Ln** = 4 and **Hn** = 0 when both top and bottom margins are specified. Use **Ln** = 2 and **Hn** = 0 when only the top margin is specified. The number of parameter bytes is equal to 256 times **Hn** plus **Ln**.

The top margin parameter (**tm**) is a two-byte parameter which specifies the distance, in inches, from the top of form to the top edge of the first line of print. The distance is equal to 256 times **Htm** plus **Ltm** divided by 1440 inches. A top margin greater than or equal to zero and less than the page length is considered to be

valid. Top margins greater than the page length result in both the top and bottom margins being set inactive.

The bottom margin parameter (**bm**) is a two-byte parameter which specifies the distance from the top of form to the top edge of the bottom margin zone in inches. The distance is equal to 256 times **Hbm** plus **Lbm** divided by 1440 inches. A bottom margin greater than the top margin and less than or equal to the page length is considered to be valid. A bottom margin less than or equal to the top margin or greater than the page length results in both the top and bottom margins being set inactive.

For example, to set a top and bottom margin of 1 inch, assuming an 11-inch page, the top margin would be set to **tm** = 1 inch and the bottom margin would be set to **bm** = 10 inches. The top margin parameter values would be **Htm** = 5 and **Ltm** = 160. The bottom margin parameter values would be **Hbm** = 56 and **Lbm** = 64.

```
LPRINT CHR$(27);CHR$(91);CHR$(83);  
        CHR$(4);CHR$(0);  
        CHR$(5);CHR$(160);CHR$(56);CHR$(64);
```

ESC [T Select Code Page

ESC [T Ln Hn 0 0 Hcp Lcp 0

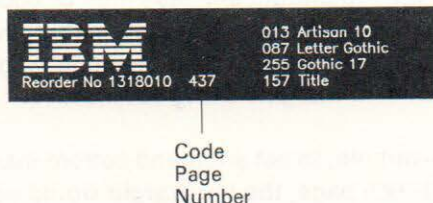
This command is used to identify the code page id of the font. The code page id of the embedded font is 437. This is the standard IBM Personal Computer US code page. The code page id number is a method of identifying to the printer the character-to-code-point assignment allowing the printer to support different language requirements.

The parameter values of **Ln** and **Hn** specify the number of parameter bytes which follow. The number of parameter bytes is 256 times **Hn** plus **Ln**.

The first two parameters following the **Hn** parameter are not used by the printer. It is recommended that zero be used for each of these parameters. These parameters must be included.

The **cp** parameter is a two-byte parameter which specifies the id number of the code page to be selected. The code page id is equal to 256 times **Hcp** plus **Lcp**.

Note: The parameter order is high/low. The code page number for a pluggable font is located to the right of the Reorder No. (See below.)



See the information supplied with your Font Download Option for the code page id numbers.

The last parameter following the code page parameter is optional. If it is used, it is recommended that it be specified as zero. If this parameter is omitted, **Ln** and **Hn** must be adjusted accordingly (**Ln** = 4, **Hn** = 0).

Note: Before printing from a selected code page, the font id last selected should exist in the code page. If the font id does not exist, a font error may result. See ESC [I for a description of "best fit." It is recommended that the Select Code Page command (ESC [T) be followed by the Select Font command (ESC [I). For example: to specify the code page of the embedded font (**cp** = 437):

```
LPRINT CHR$(27);CHR$(91);CHR$(84);
      CHR$(5);CHR$(0);
      CHR$(0);CHR$(0);
      CHR$(1);CHR$(181);CHR$(0);
```

ESC [\ Set Vertical Units

ESC [\ **Ln Hn Lt-units Ht-units Lg-units Hg-units**

This command sets the base units for the ESC A, ESC J, and ESC 3 commands.

The parameter values **Ln** and **Hn** specify the number of bytes used in specifying the t-unit and g-unit parameter values. Use **Ln**

= 4 and **Hn** = 0 when both t-unit and g-unit parameters are specified. If only the t-unit parameters are specified, then use **Ln** = 2 and **Hn** = 0. The number of parameter bytes is 256 times **Hn** plus **Ln**.

The **t-units** parameter is a two-value parameter indicating the vertical index increment used by subsequent ESC A commands. When the printer is initialized **t-units** is set to 72. A value of zero will not change the current setting. Valid values are given in the table below.

The **g-units** parameter is a two-value parameter indicating the vertical index increment used by subsequent ESC 3 (Set Graphics Line Spacing), and ESC J (Variable Line Feed) commands. When the printer is initialized, **g-units** is set to 216. A value of zero will not change the current setting.

The values in the following table represent the valid values for both the t-units and g-units parameters. Other values result in no change.

t/g-units L	t/g-units H	Function
00	00	No change
48	00	Units of 1/48ths
72	00	Units of 1/72nds
96	00	Units of 1/96ths
120	00	Units of 1/120ths
144	00	Units of 1/144ths
216	00	Units of 1/216ths
240	00	Units of 1/240ths
160	05	Units of 1/1440ths

For example, to set the vertical g-units parameter equal to 240 and not change the t-units parameter:

```
LPRINT CHR$(27);CHR$(91);CHR$(92);  
        CHR$(4);CHR$(0);  
        CHR$(0);CHR$(0);  
        CHR$(240);CHR$(0);
```


ESC \ Print All Characters

ESC \ Ln Hn c1 c2 ... ck

This command causes the printer to interpret the next **Ln** plus 256 times **Hn** code points (**c2 ... ck**) as printable characters even though the normal interpretation of some of the code points may have been controls. The character printed is a function of the font being used. The Printer Table on page 4-57 illustrates the character- to-code point assignment for the normal IBM Personal Computer code page. Country-dependent code pages have unique character-to-code point assignments.

```
LPRINT CHR$(27);CHR$(92);CHR$(Ln);CHR$(Hn);  
        CHR$(c1); ... CHR$(ck);
```

ESC] Reverse Line Feed

ESC] causes the printer to perform a reverse line feed based on the currently active line spacing increment. The reverse line feed is bounded by the top margin or top of form.

```
LPRINT CHR$(27);CHR$(93);
```

ESC ^ Print Next Character

ESC ^ n

This command causes the code point represented by the parameter **n** to be printed as a character even though its normal interpretation may be as a control. See ESC \ (Print All Characters) for code point-to-character discussion. The following example will print the paragraph symbol (¶), which has a decimal value of 20.

```
LPRINT CHR$(27);CHR$(94);CHR$(20);
```

ESC d Space Forward

ESC d Ln Hn

This command spaces the print position forward a specified distance. The distance in inches is equal to **Ln** plus 256 times **Hn** divided by 120. This command may be used in place of the SP (space) control to justify text. If the continuous underline mode is active (ESC -), the space generated by this command is automatically underlined. If the specified distance exceeds the right margin, the print position is moved to the right margin. For example, to advance the printing position 35/120 inches:

```
LPRINT CHR$(27);CHR$(100);CHR$(35);  
CHR$(00);
```

ESC e Space Backward

ESC e Ln Hn

This command spaces the print position backward a specified distance. The distance in inches is equal to **Ln** plus 256 times **Hn** divided by 120. Space generated by this command is not underlined. If the specified distance exceeds the left margin, the print position is returned to the left margin. For example, to backspace 23/120 inches:

```
LPRINT CHR$(27);CHR$(101);CHR$(23);  
CHR$(00);
```

ESC j Stop

This command causes the printer to beep once and stop printing, and blinks the **Ready** light. You can make the printer ready by pressing **Start/Stop**.

```
LPRINT CHR$(27);CHR$(106);
```

ESC n Select Aspect Ratio

ESC n d

The value of parameter **d** specifies the horizontal to vertical aspect ratio for the graphics bit image commands, ESC K, ESC L, ESC Y, and ESC Z. A value of **d** = 0 or 1 selects an aspect ratio of 5:6. A value of **d** = 2 selects an aspect ratio of 1:1. Values of 3 and above are ignored. The horizontal dot density of bit image data is determined by which of the bit image commands is used. The vertical dot density is determined by the bit image command being used and the selected aspect ratio. The default value is 5:6. The following example selects an aspect ratio of 1:1:

```
LPRINT CHR$(27);CHR$(110);CHR$(2);
```

Printer Table with ASCII Decimal and Hexadecimal Values

Explanation of Printer Table Columns

Codes sent from your computer to your IBM "Quietwriter" III Printer can be interpreted in several different ways, as shown in the following printer table.

The printer table is also called a "Code Page." The code page shown has been assigned an identification number of 437. Code page 437 contains the character set for the four fonts embedded in your IBM "Quietwriter" III Printer.

Column 1 - Dec

Decimal value for single-byte printer control codes. These are used by many text editors and software languages (such as BASIC) to represent codes to be sent to the printer.

Column 2 - Hex

Hexadecimal value for single-byte printer control codes. These are the hexadecimal representations of the binary data that is sent to the printer. These values are printed in the Hex Trace Dump. For more information, see "Hex Trace Dump" on page 6-18.

Column 3 - Graphic Symbol

This column shows the character or graphic symbol associated with each of the 256 single-byte printer code points. These characters can be accessed by preceding the code with either an ESC \ or an ESC ^ command. (See ESC \ on page 4-52 or ESC ^ on page 4-52.)

Columns 4 and 5 - Set 1 and Set 2

These columns contain a mixture of printer control codes and characters as defined by the IBM Personal Computer character sets 1 and 2. The columns show how the IBM "Quietwriter" III Printer will interpret single-byte codes, depending on which character set you have selected.

Column 6 — PS

In proportionally spaced fonts, the width of each character varies. The PS column shows the proportional space escapement width for each character in units of 1/120th of an inch.

Printer Table

Dec	Hex	Graphic	Set 1	Set 2	PS
0	00		NUL	NUL	10
1	01	☺			10
2	02	☹			10
3	03	♥		♥	10
4	04	♦		♦	10
5	05	♣		♣	10
6	06	♠		♠	10
7	07	•	BEL	BEL	10
8	08	■	BS	BS	10
9	09	○	HT	HT	10
10	0A	◻	LF	LF	10
11	0B	♂	VT	VT	10
12	0C	♀	FF	FF	10
13	0D	♪	CR	CR	10
14	0E	🎵	SO	SO	10
15	0F	⚙	SI	SI	10
16	10	▶			10
17	11	◀	DC1	DC1	10
18	12	↕	DC2	DC2	10
19	13	!!			10
20	14	📄	DC4	DC4	10
21	15	§		§	10
22	16	—			10
23	17	↕			10
24	18	↑			10
25	19	↓			10
26	1A	→			10
27	1B	←	ESC	ESC	10
28	1C	└			10
29	1D	↔			10
30	1E	▲			10
31	1F	▼			10

Printer Table (continued)

Dec	Hex	Graphic	Set 1	Set 2	PS
32	20	SPACE	SP	SP	10
33	21	!	!	!	10
34	22	"	"	"	10
35	23	#	#	#	10
36	24	\$	\$	\$	10
37	25	%	%	%	10
38	26	&	&	&	12
39	27	'	'	'	6
40	28	(((10
41	29)))	10
42	2A	*	*	*	10
43	2B	+	+	+	10
44	2C	,	,	,	10
45	2D	-	-	-	10
46	2E	.	.	.	10
47	2F	/	/	/	10
48	30	0	0	0	10
49	31	1	1	1	10
50	32	2	2	2	10
51	33	3	3	3	10
52	34	4	4	4	10
53	35	5	5	5	10
54	36	6	6	6	10
55	37	7	7	7	10
56	38	8	8	8	10
57	39	9	9	9	10
58	3A	:	:	:	10
59	3B	;	;	;	10
60	3C	<	<	<	10
61	3D	=	=	=	10
62	3E	>	>	>	10
63	3F	?	?	?	10

Printer Table (continued)

Dec	Hex	Graphic	Set 1	Set 2	PS
64	40	@	@	@	10
65	41	A	A	A	14
66	42	B	B	B	14
67	43	C	C	C	14
68	44	D	D	D	14
69	45	E	E	E	12
70	46	F	F	F	12
71	47	G	G	G	14
72	48	H	H	H	14
73	49	I	I	I	8
74	4A	J	J	J	10
75	4B	K	K	K	14
76	4C	L	L	L	12
77	4D	M	M	M	14
78	4E	N	N	N	14
79	4F	O	O	O	14
80	50	P	P	P	12
81	51	Q	Q	Q	14
82	52	R	R	R	14
83	53	S	S	S	12
84	54	T	T	T	14
85	55	U	U	U	14
86	56	V	V	V	14
87	57	W	W	W	14
88	58	X	X	X	14
89	59	Y	Y	Y	14
90	5A	Z	Z	Z	12
91	5B	[[[10
92	5C	\	\	\	10
93	5D]]]	10
94	5E	^	^	^	10
95	5F	_	_	_	10

Printer Table (continued)

Dec	Hex	Graphic	Set 1	Set 2	PS
96	60	`	`	`	10
97	61	a	a	a	10
98	62	b	b	b	12
99	63	c	c	c	10
100	64	d	d	d	12
101	65	e	e	e	10
102	66	f	f	f	8
103	67	g	g	g	12
104	68	h	h	h	12
105	69	i	i	i	6
106	6A	j	j	j	6
107	6B	k	k	k	12
108	6C	l	l	l	6
109	6D	m	m	m	14
110	6E	n	n	n	12
111	6F	o	o	o	10
112	70	p	p	p	12
113	71	q	q	q	12
114	72	r	r	r	10
115	73	s	s	s	10
116	74	t	t	t	8
117	75	u	u	u	12
118	76	v	v	v	12
119	77	w	w	w	14
120	78	x	x	x	12
121	79	y	y	y	12
122	7A	z	z	z	10
123	7B	{	{	{	10
124	7C				10
125	7D	}	}	}	10
126	7E	~	~	~	10
127	7F	␣	␣	␣	10

Printer Table (continued)

Dec	Hex	Graphic	Set 1	Set 2	PS
128	80	Ç		Ç	14
129	81	ü		ü	12
130	82	é		é	10
131	83	â		â	10
132	84	ä		ä	10
133	85	à		à	10
134	86	å		å	10
135	87	ç	BEL	ç	10
136	88	ê	BS	ê	10
137	89	ë	HT	ë	10
138	8A	è	LF	è	10
139	8B	ï	VT	ï	6
140	8C	î	FF	î	6
141	8D	ĩ	CR	ĩ	6
142	8E	Ä	SO	Ä	14
143	8F	Å	SI	Å	14
144	90	É		É	12
145	91	æ	DC1	æ	14
146	92	Æ	DC2	Æ	14
147	93	ô		ô	10
148	94	ö	DC4	ö	10
149	95	ò		ò	10
150	96	û		û	12
151	97	ù		ù	12
152	98	ÿ		ÿ	12
153	99	Ö		Ö	14
154	9A	Ü		Ü	14
155	9B	ç	ESC	ç	10
156	9C	£		£	10
157	9D	¥		¥	10
158	9E	Pts		Pts	14
159	9F	f		f	10

Printer Table (continued)

Dec	Hex	Graphic	Set 1	Set 2	PS
160	A0	á	á	á	10
161	A1	í	í	í	6
162	A2	ó	ó	ó	10
163	A3	ú	ú	ú	12
164	A4	ñ	ñ	ñ	12
165	A5	Ñ	Ñ	Ñ	14
166	A6	ä	ä	ä	10
167	A7	ö	ö	ö	10
168	A8	ı	ı	ı	10
169	A9	┐	┐	┐	10
170	AA	┐	┐	┐	10
171	AB	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	10
172	AC	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	10
173	AD	ı	ı	ı	10
174	AE	«	«	«	14
175	AF	»	»	»	14
176	B0	⋮	⋮	⋮	10
177	B1	⋮	⋮	⋮	10
178	B2	⋮	⋮	⋮	10
179	B3	┐	┐	┐	10
180	B4	┐	┐	┐	10
181	B5	┐	┐	┐	10
182	B6	┐	┐	┐	10
183	B7	┐	┐	┐	10
184	B8	┐	┐	┐	10
185	B9	┐	┐	┐	10
186	BA	┐	┐	┐	10
187	BB	┐	┐	┐	10
188	BC	┐	┐	┐	10
189	BD	┐	┐	┐	10
190	BE	┐	┐	┐	10
191	BF	┐	┐	┐	10

Printer Table (continued)

Dec	Hex	Graphic	Set 1	Set 2	PS
192	C0	L	L	L	10
193	C1	⊥	⊥	⊥	10
194	C2	T	T	T	10
195	C3	└	└	└	10
196	C4	—	—	—	10
197	C5	+	+	+	10
198	C6	⌞	⌞	⌞	10
199	C7	⌚	⌚	⌚	10
200	C8	⌞	⌞	⌞	10
201	C9	⌞	⌞	⌞	10
202	CA	⌞	⌞	⌞	10
203	CB	⌞	⌞	⌞	10
204	CC	⌞	⌞	⌞	10
205	CD	=	=	=	10
206	CE	⌞	⌞	⌞	10
207	CF	⌞	⌞	⌞	10
208	D0	⌞	⌞	⌞	10
209	D1	⌞	⌞	⌞	10
210	D2	⌞	⌞	⌞	10
211	D3	⌞	⌞	⌞	10
212	D4	⌞	⌞	⌞	10
213	D5	F	F	F	10
214	D6	⌞	⌞	⌞	10
215	D7	⌞	⌞	⌞	10
216	D8	⌞	⌞	⌞	10
217	D9	┘	┘	┘	10
218	DA	┘	┘	┘	10
219	DB	■	■	■	10
220	DC	■	■	■	10
221	DD	■	■	■	10
222	DE	■	■	■	10
223	DF	■	■	■	10

Printer Table (continued)

Dec	Hex	Graphic	Set 1	Set 2	PS
224	E0	α	α	α	10
225	E1	β	β	β	12
226	E2	Γ	Γ	Γ	12
227	E3	π	π	π	12
228	E4	Σ	Σ	Σ	14
229	E5	σ	σ	σ	12
230	E6	μ	μ	μ	12
231	E7	τ	τ	τ	10
232	E8	Φ	Φ	Φ	14
233	E9	Θ	Θ	Θ	14
234	EA	Ω	Ω	Ω	14
235	EB	δ	δ	δ	10
236	EC	∞	∞	∞	10
237	ED	Φ	Φ	Φ	14
238	EE	ϵ	ϵ	ϵ	10
239	EF	\cap	\cap	\cap	10
240	F0	\equiv	\equiv	\equiv	10
241	F1	\pm	\pm	\pm	10
242	F2	\geq	\geq	\geq	10
243	F3	\leq	\leq	\leq	10
244	F4	\int	\int	\int	10
245	F5	\int	\int	\int	10
246	F6	\div	\div	\div	10
247	F7	\approx	\approx	\approx	10
248	F8	\circ	\circ	\circ	10
249	F9	\bullet	\bullet	\bullet	10
250	FA	\bullet	\bullet	\bullet	10
251	FB	$\sqrt{\quad}$	$\sqrt{\quad}$	$\sqrt{\quad}$	10
252	FC	"	"	"	10
253	FD	2	2	2	10
254	FE	\blacksquare	\blacksquare	\blacksquare	10
255	FF				10

Programming Reference

Software Support

All software packages do not automatically support all the features of your printer. For example, automatic text underlining is not a feature of all word processing software, and much software does not allow font switching.

In addition, some software packages may be able to perform a task on one printer and not on another. For instance, a word processing program may support proportional spacing for one printer and not for another.

For details on which printer capabilities your software supports, review the instruction manual that came with your software, or contact your software point of purchase.

When your software package does not support one of the printer's capabilities (like proportional spacing), you may be able to use printer control codes to perform the function.

Since each software application is unique, read your software instructions carefully before using the printer control code charts. Some software allows you to embed control codes within text or data. Other software allows you to pass control codes only as part of the formatting lines, while some software packages prohibit the passing of any control codes to the printer.

Methods of embedding printer control codes vary with software packages. For example, IBM Writing Assistant uses the *P or *Printer command to embed control codes. Multiplan¹ uses the alternate button (Alt) for embedding the codes and also allows codes to be passed in the printer formatting lines. Most software packages have instructions for the use of printer control codes in its operating manual.

¹ U.S. trademark of Microsoft Corporation

Justifying Text with a Proportional Spacing Font

The commands Space Forward (ESC d) and Space Backward (ESC e) can be used to justify text with a proportional spacing font. These commands move the carrier in very fine horizontal increments of 1/120 inch.

The width of each proportional spacing character can be found in the printer tables starting on page 4-57. Each unit is 1/120 inch.

Graphics Capability

The IBM "Quietwriter" III Printer supports two different modes of graphics printing. One mode allows the IBM "Quietwriter" III Printer to produce graphics images similar, but not identical, to those produced by the IBM Graphics Printer 5152. Due to differences in the printing technology between the two printers, graphics images designed for the 5152 may not look exactly the same when printed on the IBM "Quietwriter" III Printer.

The second graphics mode allows the IBM "Quietwriter" III Printer to print high resolution graphics using its own unique set of graphics controls.

The graphics modes are selected using the ESC n control code Select Aspect Ratio on page 4-54. For details on graphics printing, see the *IBM "Quietwriter" III Printer Technical Reference Guide* (Item No. 1318393 [Form No. S544-4083]).

To ensure the best print quality when printing graphics, be sure the paper bail holds the paper against the platen.

Supplies

The following pages contain descriptions of the supplies recommended for the IBM "Quietwriter" III Printer. Each supply item is described by name and order number. In addition, directions for installing the supply item are given and, in some cases, information is given to help you determine if a new supply item is needed.

Ordering Supplies

To order IBM supplies, call your point of purchase or your local IBM dealer.

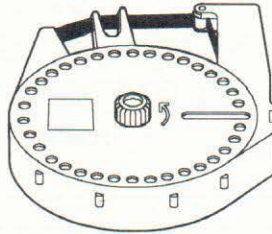
Authorized IBM Dealer

(phone number)

IBM Direct

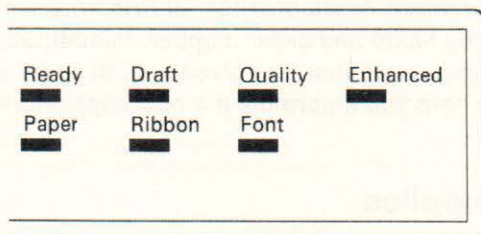
IBM Quiet® III High Yield Printer Ribbon

Part Number: 1299933

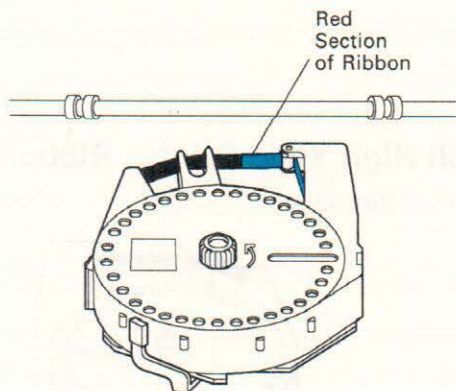


Changing Ribbons

Your printer warns you when it runs out of ribbon or if there is a problem in the ribbon mechanism. The printer beeps and stops printing. The **Ribbon** light comes on and the **Ready** light goes off.



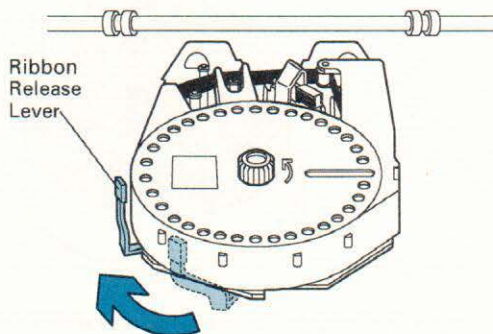
When the **Ribbon** light comes on, check first to see if you have run out of ribbon. Look for the red section of ribbon at the printhead position. This indicates the end of the ribbon.



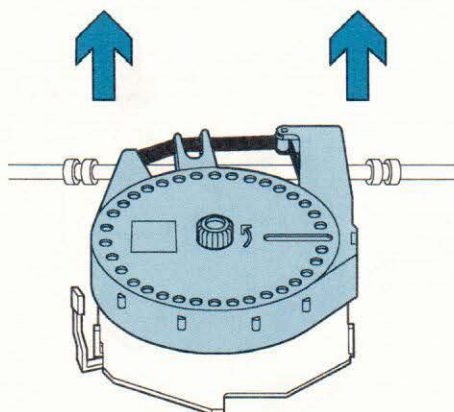
If you are not out of ribbon, press and release **Start/Stop** to resume printing. If the problem continues, refer to "Problem Determination Procedures" on page 6-1.

Removing the Ribbon

1. If the **Ready** light is on, press **Start/Stop** to make the printer *not ready*.
 - Do not turn the printer off. If you do, the rest of your job will be lost from the printer buffer.
 - When the printer stops printing, the carrier will return to the center of the platen.
2. Open the printer cover.
3. Push the ribbon release lever away from you to the open position.

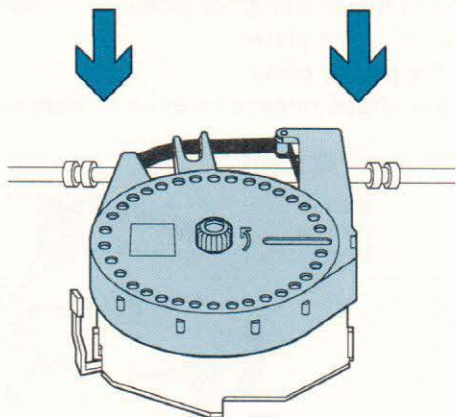


4. Turn the ribbon take-up knob in the direction of the arrow to take up any loose ribbon.
5. Lift the ribbon cartridge straight up.

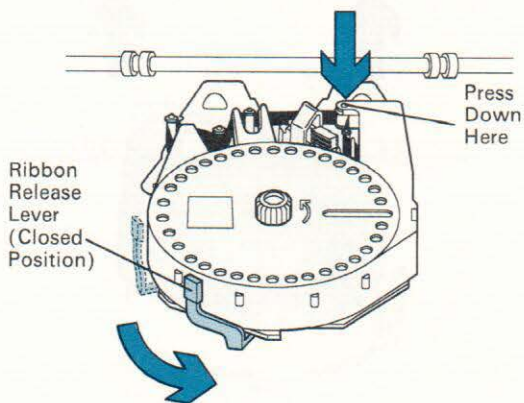


Replacing the Ribbon

1. Turn the ribbon take-up knob in the direction of the arrow to take up any loose ribbon.
2. Make sure the ribbon release lever is in the open position.
3. Place the ribbon cartridge on the carrier assembly.



4. Make sure the ribbon is threaded between the posts and is behind the printhead.
5. Press down on the ribbon cartridge to make sure it is securely seated.
6. Pull the ribbon release lever toward you to the closed position. Check to be sure that the lever is fully closed as shown below.

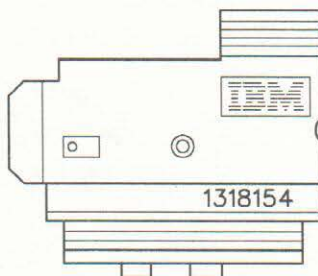


7. Close the printer cover.
8. Press **Start/Stop** to resume printing.

IBM Quiet® III Printhead

Part Number: 1318154

Your printhead will need to be replaced periodically depending on how much you use it. To order a new printhead, see "Ordering Supplies" on page 5-1.



Changing the Printhead

A worn printhead can cause poor print quality, as shown in the examples below.

<i>The</i>	wavy characters
The The	tops or bottoms of characters missing
The	random parts of characters missing
The The	"dirt" or "silver specks" around or within characters, especially in Enhanced mode

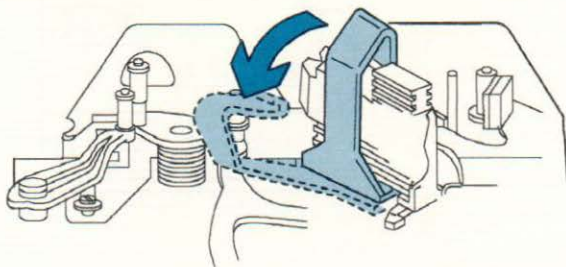
Before replacing the printhead, follow the guidelines below:

- Always replace the brown felt pad when replacing the printhead.
- Always remove the ribbon cartridge before you remove the printhead.
- Never install a printhead if it appears damaged.
- Never use a printhead if it has been used on another printer. (Used printheads can contribute to poor print quality.)

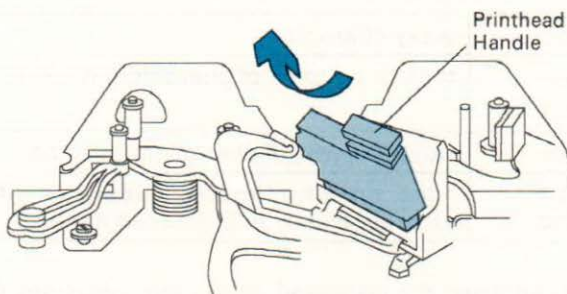
Warning: Hold the printhead by the handle only. Touching any other surface may damage the printhead.

Removing the Printhead

1. Press **Start/Stop**.
 - The printer will stop printing and the carrier will return to the center of the platen.
 - Do *not* turn off the printer to change the printhead if you are printing a job. If you turn off the printer while it is printing, the rest of your job will be lost from the printer buffer.
2. Remove the ribbon cartridge.
3. Pull the printhead clip up and away from the printhead.



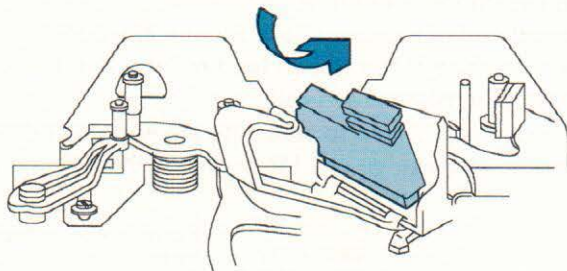
4. Hold the printhead by the handle, as shown, and lift it out of the printer.



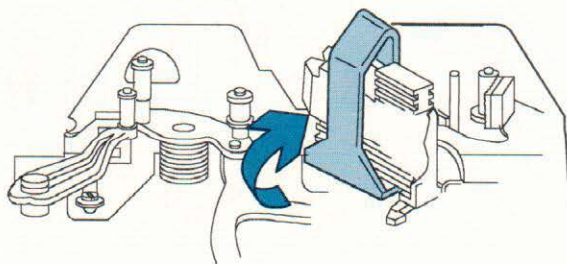
Replacing the Printhead

Warning: Never install a printhead that appears damaged.

1. Hold the printhead by the handle.
2. Place the printhead on the printhead mount.



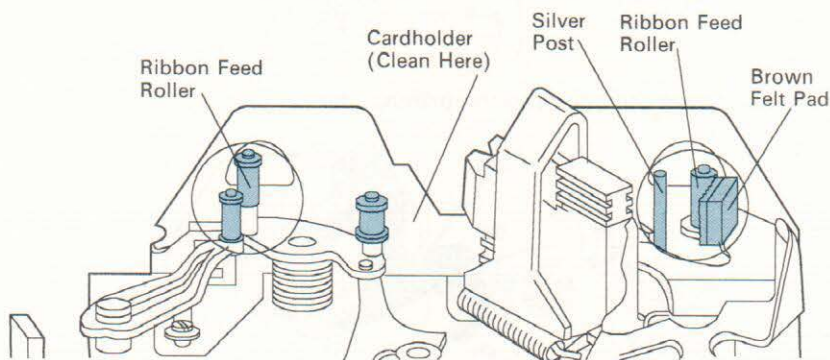
3. Move the clip onto the printhead.



Cleaning the Cardholder and Ribbon Feed Rollers

Each time you replace the printhead (or when you are having print quality problems), you should remove any accumulated dirt from the ribbon feed rollers and cardholder.

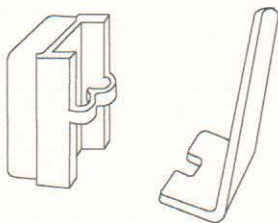
1. Locate the ribbon feed rollers shown below.
2. Use the round end of a paper clip to loosen any accumulated dirt or ink on the surface of the ribbon feed rollers. Use a soft cloth or tissue to clean the ribbon feed rollers.
3. Also use the cloth or tissue to clean the silver post and the cardholder and to clean up any loose dirt on the ribbon carrier.



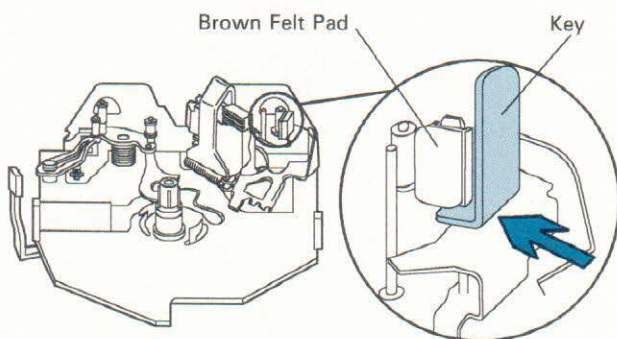
Changing the Brown Felt Pad

Each time you replace the printhead, you should also replace the felt pad which is located on the ribbon carrier.

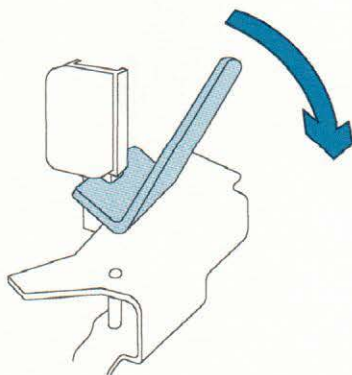
1. Locate the brown felt pad and key which came with the replacement printhead.



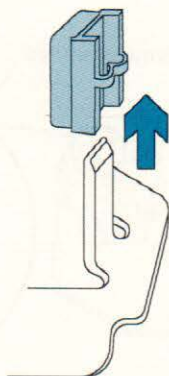
2. Insert the key under the right side of the brown felt pad as shown below.



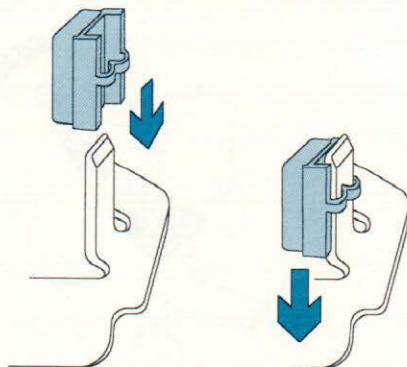
3. Pry the pad up by pushing the key to the right and down as shown below.



4. Remove the pad and discard.



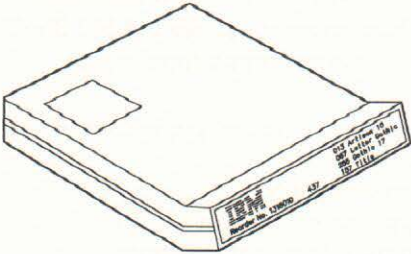
5. Install the new felt pad as shown.



6. Reinstall the ribbon cartridge and close the cover.

IBM Electronic Font III

Pluggable cartridges, containing various fonts, are available from your point of purchase.



The illustration below shows the location of the order number and code page number on the cartridge label.



To order an IBM Electronic Font III, see "Ordering Supplies" on page 5-1.

Paper

Whether you are using forms or single sheets, the IBM "Quietwriter" III Printer provides good print quality on smooth paper. While rough paper is acceptable for drafts, you should print final documents on paper with a maximum roughness of 300 Sheffield points—most 20-lb. xerographic papers meet this requirement.

A few of many recommended papers are listed below.

- ARDOR¹ XEROCOPY
- Champion² Bond
- HAMMERMILL FORE³ XEROCOPY
- IBM MULTI-SYSTEM PAPER
- MEAD INFOR Xerographic
- NEKOOSA⁴ BOND
- SPRINGHILL⁵ BUSINESS PAPER

¹ Trademark of Nekoosa Papers Inc.

² Trademark of Champion International Corporation

³ Trademark of Hammermill Papers Group

⁴ Trademark of Nekoosa Papers Inc.

⁵ Trademark of International Paper Co.

Transparencies

The IBM "Quietwriter" III Printer may be used to print directly on transparencies. Print quality and durability depend on the transparency used. Therefore, transparencies should be tested for acceptability.

Below are several considerations for printing on transparencies:

- Transparencies produced for use with infrared copiers generally give acceptable results when printing is done on the front or non-infrared side. In general the front of the transparency is identified by placing the "notch" in the transparency in the upper right-hand corner or as recommended by the individual manufacturer.
- A white sheet of xerographic paper must be loaded behind each transparency.
- Use the Quality print mode.
- Information printed on the transparency is not indelible; it can be removed.

Listed below are three transparencies which have been tested with the printer. Since changes in the design or manufacture of these transparencies by the manufacturer cannot be anticipated by IBM, these transparencies should be tested for acceptable results with your application.

- 3M, Scotch[®] 7100, Transparency Film for Infrared Copiers, D.C./Part No. 021200-16819
- 3M, 1301, Transparency Film for Overhead Projection, Infrared Transparency Film, Reorder Number 78-6969-5495-3
- Labelon Corporation, TR-45, Projection Transparencies-Infrared, Order No. TR-45C.

Other transparencies may provide acceptable results for your application. However, they should also be tested.

⁶ Trademark of 3M

Problem Determination Procedures

Before you use these Problem Determination Procedures, check to see that your printer is free of obvious problems such as foreign objects (paper clips, pens, and so on) in the printer.

Use these Problem Determination Procedures before having your printer serviced. You may be able to correct the problem without help from a service representative and avoid unnecessary downtime and service costs. By following the step-by-step procedures you will be able to determine what to do to make your printer operational again.

A spare printhead, font, and ribbon are needed to diagnose some problems.

It is important that you follow the steps in order. If you change anything on the printer, try to print again before going to the next step. If you have followed all the steps and none of them solve the problem, your printer requires service.

Note: Before using these procedures you may want to use the "Power-On Self Test" on page 6-14, the "Printer Self Test" on page 6-15, or the "Hex Trace Dump" on page 6-17 to help diagnose your printer problems.

Look for your problem on the charts below and follow the instructions.

If the printer beeped and:

The Ribbon light is on and the Ready light is off:	Go to Step 7 on page 6-5.
The Paper light is on and the Ready light is off:	Go to Step 14 on page 6-9.
The Font light is on solid and the Ready light is off:	Go to Step 8 on page 6-7.
The Font light is blinking and the Ready light is off.	Go to Step 10 on page 6-8.
The Ready light is off:	<p>Press Start/Stop.</p> <ul style="list-style-type: none">● If the printer beeps, make sure the printer cover is completely closed.● If the Ready light does not come back on, your printer requires service.

For any other printer problems:

If all the lights are blinking, and the printer beeped continuously for about six seconds:	Make sure the ribbon, font and paper handler are installed correctly. Press Start/Stop . If the error occurs again, install a new ribbon. Turn the printer off, wait five seconds, then turn it on again. If the problem occurs again, your printer requires service.
The Ready light is blinking and the printer has beeped:	The printer has received a Stop command from the computer. Check your print application for font, paper, or other changes.
If the print quality is poor:	Go to Step 20 on page 6-11.
If you have a problem with a paper feeder:	Go to Step 13 on page 6-9.
If you have a problem diagnosing your symptom:	Run the "Power-On Self Test" on page 6-14, the "Printer Self Test" on page 6-15, or the "Hex Trace Dump" on page 6-17.
For any other problems:	Start with Step 1 on page 6-4.

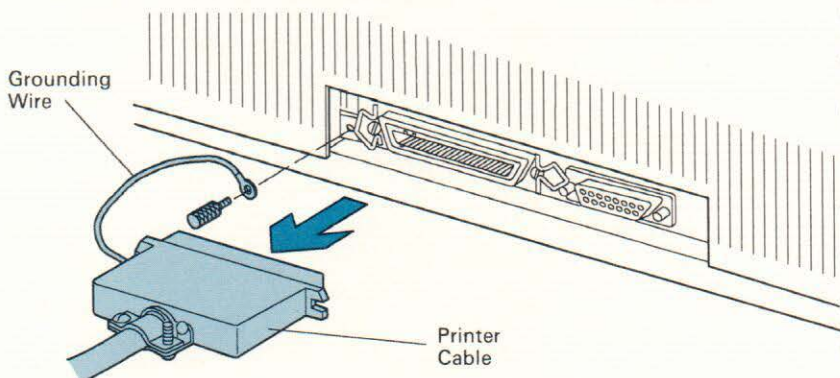
1. Turn the printer off and do the following checks:
 - a. Make sure the printer power cord is plugged into the back of the printer.
 - b. Make sure the printer power cord is completely plugged into a wall outlet.
 - c. Make sure any other equipment plugged into the same wall outlet operates.
 - d. Make sure the wall outlet does not turn off with the room lights or other switches.
 - e. Plug the printer into a different wall outlet.
 - f. Make sure your printer cable is correctly connected from your computer to your printer.
 - g. Make sure the printer top cover is completely latched down.

Did you find any problem while following the above steps?

No — Go to Step 2.

Yes — Correct the problem and try to print again.

2. Turn off the Power switches on the printer and computer (and expansion unit, if attached).
3. Disconnect the printer cable from the printer and make sure that nothing else is attached to the connector.



4. Turn on the printer Power switch.

After a few moments, all lights go off except **Ready** and one of the print mode lights (**Draft**, **Quality**, or **Enhanced**).

Are there *only* two lights still on (**Ready** and one print mode light)?

No —

- a. If you have a font cartridge installed, turn off the printer, remove the cartridge and go back to the beginning of this step.
- b. If you don't have a font cartridge installed but a sheetfeed is being used, disconnect the sheetfeed and turn the printer Power switch back on. Make sure the cover is completely closed. If the **Ready** light is off, press **Start/Stop**. If the **Ready** light does not come on, have your printer serviced.

Yes — Go to Step 5.

5. Run the Printer Self Test. If you need help running the printer self test, refer to "Printer Self Test" on page 6-15 for the procedure.

Were you able to feed the paper?

No — Go to Step 13 on page 6-9.

Yes — Go to Step 6.

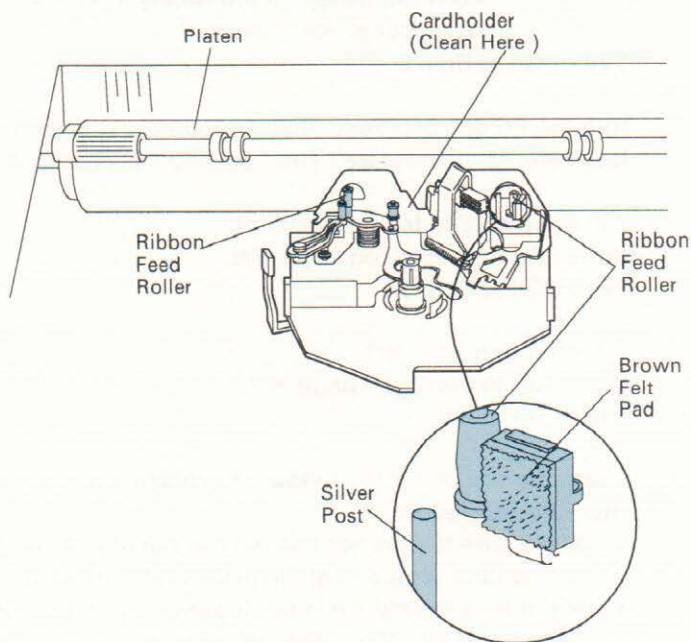
6. Is the **Ribbon** light on?

No — Go to Step 8 on page 6-7.

Yes — Go to Step 7.

7. Check the ribbon for the following problems and press **Start/Stop** after checking each:
 - a. Make sure the printer has not run out of ribbon. (Look for the red section of ribbon at the printhead position.)
 - b. Make sure the ribbon is not loose or wrinkled. Remove the ribbon and turn the ribbon take-up knob in the direction of the arrow to take up any loose or wrinkled ribbon. When you replace the ribbon, make sure that it is installed correctly. (See "Replacing the Ribbon" on page 5-4.)

- c. Make sure the ribbon is not broken. If it is, remove it.
- d. Locate the brown felt pad on the ribbon carrier as shown below. Replace the pad and clean up any accumulated ink or dirt on the ribbon feed rollers, silver post, cardholder and ribbon carrier. See "Cleaning the Cardholder and Ribbon Feed Rollers" on page 5-8 and "Changing the Brown Felt Pad" on page 5-8. Then try another ribbon. If the ribbon breaks again, have your printer serviced.



- e. Make sure the ribbon release lever is securely latched in the closed position.
- f. Make sure the printer is not printing over any wrinkles, folds, or edges of the paper (such as over the edge of an envelope).
- g. Make sure the printer is not printing over any perforations or holes in the paper.
- h. Press firmly on both sides of the platen to make sure it is securely latched.
- i. Remove the ribbon from the printer. Turn the ribbon take-up knob in the direction of the arrow to take up any loose ribbon.
- j. Try using another ribbon on the printer.
- k. Make sure the printhead does not appear damaged and is correctly installed.
- l. Try using another printhead.

Did the **Ribbon** light go off?

No — Your printer requires service.

Yes — Go to Step 8 if you have another printer problem. If not, leave these problem determination procedures and continue printing.

8. Is the **Font** light on solid and did the printer beep?

No — Go to Step 10 on page 6-8.

Yes — Are you using the correct font cartridge for your application and are your setup switches correctly set?

No — Do one of the following:

- Install the correct font cartridge.
- Press **Start/Stop** to ignore the error condition. The printer will choose a "best fit" font.
- If you were attempting to download a font, press **Start/Stop** to cancel the download operation.

Yes — If you removed the font cartridge while it was being used, plug the *same* font cartridge back into the printer and press **Start/Stop** to resume printing. If you did not remove the font cartridge, go to Step 9.

Note: If you have a blank cartridge installed in the printer and the setup switches are set for pluggable font selection, the **Font** light will come on when you turn on the printer. Press **Start/Stop** to continue printing.

9. Do you have another font cartridge of the same type to use?

No —

- a. Press **Start/Stop** to ignore the error condition. The printer will choose a "best fit" font. If you were attempting to download a font, press **Start/Stop** to cancel the download operation.
- b. Try the font cartridge again or use another font cartridge.
 - 1) Press **Code** and **Reset** or turn off the printer.
 - 2) Try to run the job again.
- c. If the **Font** light comes on again, your printer or font cartridge requires service.

Yes — Install the other font cartridge. Did the **Font** light go off?

No — Your printer requires service.

Note: If the **Font** light blinks, you may have installed a defective cartridge. Go to Step 10 on page 6-8.

Yes — You have inserted the wrong cartridge or data was not successfully downloaded to the cartridge.

- a. Try running the Printer Self Test to check the font cartridge contents.
- b. Try to select a font using the printer front panel buttons (**Code** and **Font**) to see if the pluggable cartridge contains correctly downloaded data. If the **Font** light does not come on during the font selection, the pluggable cartridge is blank. Try downloading the font again. If you need help, see your Font Download Guide To Operations.

10. Was the **Font** light blinking and did the printer beep?

No — Go to Step 13 on page 6-9.

Yes — Were you downloading a font when the **Font** light blinked?

No — Go to Step 11 on page 6-9.

Yes —

- a. Try the download cartridge again or use another download cartridge.
 - 1) Press **Code** and **Reset** or turn the printer Power switch off.
 - 2) Try downloading the font again.

If the **Font** light blinks again after using the *same* download cartridge, you need another download cartridge or your printer requires service.

If the **Font** light blinks again after using *another* download cartridge, make sure you are using the correct download procedures. If you still have a problem, have your printer serviced.

If the **Font** light stopped blinking after using another download cartridge, your original cartridge is defective.

- b. Press **Start/Stop** and try to download the font again.
11. Is the font cartridge an Electronic Font III?
No — Replace the font with an Electronic Font III.
Yes — Go to Step 12.
12. Do you have another font cartridge to use?
No — Your font cartridge may be defective. Remove the defective cartridge from the printer to continue printing. If the **Font** light blinks without the font cartridge installed, your printer requires service.
Yes — Try the other font cartridge.
a. If the **Font** light stops blinking, your original font cartridge is defective.
b. If the **Font** light still blinks, your printer requires service.
13. Is the paper feeding correctly?
No — Go to Step 15.
Yes — Go to Step 14.
14. Is the **Paper** light on?
No — Go to Step 20 on page 6-11.
Yes — Check the following items. If you have a sheetfeed attached, remove it before following the steps below.
a. Make sure the paper release lever is in the correct position (all the way back).
b. Make sure the printer does not have a paper jam.
c. Press down firmly on both ends of the platen to make sure it is securely latched.
d. Make sure you are using paper of acceptable quality.
- Did you find any of the above problems.
No — Go to Step 15.
Yes — Correct the problem and try printing again.
15. Are you feeding single sheets manually?
No — Go to Step 16 on page 6-10.
Yes — Turn the printer off, then on again.
a. Load a sheet of white paper into the printer. If the **Paper** light comes on again, your printer needs service.

- b. If you are using transparencies, put a white backup sheet behind the transparency and load the sheets.
 - To ignore this or other paper error conditions, press **Set Top of Form**; then press **Start/Stop**. If the paper light comes on again when paper is in the printer, your printer requires service.

16. Do you have a sheetfeed attached?

No — Go to Step 17.

Yes — Check for the following:

- a. Out of paper in drawer(s).
- b. Paper jam loading paper.
- c. Paper jam ejecting paper.

If this did not correct the problem, refer to the operating instructions that came with your sheetfeed.

To bypass this error condition, press **Set Top of Form**. Then, press **Start/Stop**.

- The printer will ignore the error condition. However, unpredictable print results may occur depending on the sheetfeed you have attached to the printer.
- If this does not correct the problem, your sheetfeed requires service.

17. Do you have a pinwheel form feeder attached?

No — Check the following items:

- a. Make sure the paper release lever is in the closed position (all the way back).
- b. Make sure the printer does not have a paper jam.
- c. Press down firmly on both sides of the platen to make sure it is securely latched.
- d. Make sure you are using paper of acceptable quality.

Did you find any of the above problems?

No — Your printer requires service.

Yes — Correct the problem and try printing again.

Yes — Make sure the forms and pinwheel form feeder are installed correctly and that the paper release lever is pulled forward. If you need help with any of the above steps concerning pinwheel form feeder operations, see "Pinwheel Form Feeder" on page 3-13.

Did this correct the problem?

No — Go to Step 18.

Yes — Continue printing.

18. Make sure there is nothing blocking the forms path.

Did you find a problem with the form feeder?

No — Go to Step 19.

Yes — Correct the problem or replace your pinwheel form feeder.

19. Remove the pinwheel form feeder. Remember to push the paper release lever back to the rear position.

Insert a single sheet of paper into the printer.

Did the paper feed correctly?

No — Your printer requires service.

Yes — Your pinwheel form feeder needs to be replaced.

20. Is the quality of the printing adequate? (Are you satisfied with the way the letters look?)

No — Go to Step 21.

Yes — Go to Step 22 on page 6-12.

21. Check the following items. Then check your print quality after checking each of the items.

- a. Make sure you are printing on paper of acceptable quality. See "Paper" on page 5-12.
- b. Make sure the paper is not wrinkled.
- c. Remove the ribbon and turn the take-up knob in the direction of the arrow to advance the ribbon to an unused portion.
- d. Press down firmly on both sides of the platen to make sure it is securely latched.
- e. Make sure the printhead is correctly installed.
- f. Adjust the contrast control to a lower or higher setting.
- g. Try using the Enhanced print mode if you are using rough paper.
- h. Try printing with a new ribbon.
- i. Replace the printhead.

Try to print again.

Did your print quality improve after following the above steps?

No — Have your printer serviced.

Yes — Go to Step 22 if you have another printer problem. If not, leave these problem determination procedures and continue printing.

22. Do the printer buttons operate correctly? (Refer to "Operating the Printer" on page 3-1 if you need help.)

No — Go to Step 23.

Yes — Go to Step 24.

23. Turn the printer off, then on again.

Do the buttons operate correctly now?

No — Your printer requires service.

Yes — Go to Step 24 if you have another printer problem. If not, leave these problem determination procedures and continue printing.

24. Check the following items. Try to print your job again after checking each item. If the printer cable is disconnected, reconnect it to the printer.
- Make sure you are using the proper font for your applications.
 - Make sure your switch settings are correctly set for your application.

Your printer is also controlled by program commands from your computer. There may be commands in your program that are causing the problem.

Try running a different program that you've run successfully in the past, or run the "Hex Trace Dump" on page 6-17 to determine if the controls from your computer are valid.

Do you still have a problem with a known successful program?

No — Examine the original program for commands that are causing the problem.

Yes — Go to Step 25.

25. Run the diagnostic procedures for your computer.

Did the diagnostic procedures locate any problem?

No — Go to Step 26 on page 6-13.

Yes — Follow the instructions in your computer manual.

26. If your printer is still not working correctly after following the previous steps and you feel the problem is not in your computer, have your printer serviced.

Power-On Self Test

Each time the printer Power switch is turned on, the printer performs the Power-On Self Test. Immediately after the printer Power switch is turned on, the following actions occur:

1. All printer lights come on and then go off.
2. The printer beeps.
3. The carrier moves to the left and then back to the center.
4. The platen moves back and forth.

If there are no hardware failures or operator-correctable errors, all the lights go off, except **Ready** and one print mode light (**Draft**, **Quality**, or **Enhanced**).

If a hardware failure is detected during this test, all lights will blink and the printer will beep continuously for six seconds. Have your printer serviced.

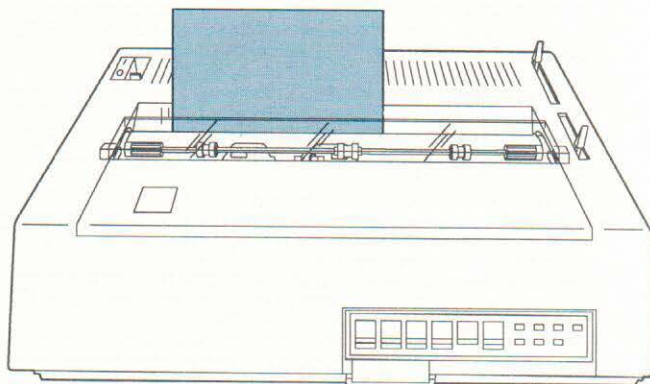
If there is an operator-correctable error or a possible hardware failure, the **Ready** light will go off and the printer will beep. Go to Step 1 on page 6-4.

Note: If the test indicates an error, make sure you do not have a pluggable cartridge installed. If you do, remove it and run the test again.

Printer Self Test

The Printer Self Test exercises the printer independent of the attached computer. Follow the steps below to run the test any time you want to make sure your printer is operating correctly or to check print quality.

1. Make sure there is paper in the printer.
2. Turn the printer Power switch off.
3. Press and hold **Start/Stop** on the printer.



4. Turn the printer Power switch on while holding **Start/Stop** pressed. You can release **Start/Stop** when the printer beeps.
 - The printer will print the test continuously. To stop the test, press and release **Start/Stop**.
 - To resume printing, press **Start/Stop**.

100

100

- 100

Hex Trace Dump

Your printer can print a hex trace dump of the source print file to assist in diagnosing print applications. This hex trace is a special print mode in the printer which prints a hexadecimal and character representation for each byte of data received. No print controls or commands are recognized while the printer is in this mode. The data is buffered into 16 byte print packets and is formatted below. Each line printed begins with five blanks. The alphabetic field (AAA ... AA) is printed in the normal character set.

To perform the hex trace dump:

1. Make sure there is paper in the printer.
2. Turn the printer off.
3. Press and hold the **Form Feed** button.
4. Turn the printer on while holding **Form Feed**. You can release **Form Feed** after a few seconds.
5. Send a job from the computer to the printer.
6. After the hex trace prints, press **Code** and **Reset**, or turn the printer off to exit the test.

An example of hex trace is shown below:

48	45	58	20	74	72	61	63-65	20	69	73	20	61	20	73	HEX trace is a s
70	65	63	69	61	6C	20	70-72	69	6E	74	20	6D	6F	64	pecial print mod
65	20	77	68	69	63	68	20-63	61	75	73	65	73	20	74	e which causes t
68	65	20	70	72	69	6E	74-65	72	20	74	6F	0A	0D	70	he printer too
72	69	6E	74	20	61	20	68-65	78	61	64	65	63	69	6D	print a hexadecimal
61	6C	20	61	6E	64	20	63-68	61	72	61	63	74	65	72	al and character
20	72	65	70	72	65	73	65-6E	74	61	74	69	6F	6E	20	representation
66	6F	72	20	65	61	63	68-20	62	79	74	65	0A	0D	6F	for each byte
66	20	64	61	74	61	20	72-65	63	65	69	76	65	64	2E	f data received.
20	20	4E	6F	20	63	6F	6E-74	72	6F	6C	73	20	6F	72	No controls or
20	63	6F	6D	6D	61	6E	64-73	20	61	72	65	20	72	65	commands are re
63	6F	67	6E	69	7A	65	64-20	77	68	69	6C	65	0A	0D	cognized while
74	68	65	20	70	72	69	6E-74	65	72	20	69	73	20	69	the printer is i
6E	20	74	68	69	73	20	6D-6F	64	65	2E	20	20	54	68	n this mode. Th
65	20	64	61	74	61	20	69-73	20	62	75	66	66	65	72	e data is buffer
65	64	20	69	6E	74	6F	20-31	36	20	62	79	74	65	0A	ed into 16 byte
0D	70	61	63	6B	65	74	73-20	61	6E	64	20	70	72	69	packets and pri
6E	74	65	64	20	69	6E	20-74	68	65	20	66	6F	6C	6C	nted in the foll
6F	77	69	6E	67	20	66	6F-72	6D	61	74	3A	0A	0D	0A	owing format:
0D	20	58	58	20	58	58	20-58	58	20	58	58	20	58	58	XX XX XX XX XX
20	58	58	20	58	58	20	58-58	2D	58	58	20	58	58	20	XX XX XX-XX XX
58	58	20	58	58	20	58	58-20	58	58	20	58	58	20	58	XX XX XX XX XX X
58	20	20	41	41	41	41	41-41	41	41	41	41	41	41	41	X AAAAAAAAAAAAA
41	41	41	0A	0D	0A	0D	45-61	63	68	20	6C	69	6E	65	AAA. Each line
20	62	65	67	69	6E	73	20-77	69	74	68	20	31	32	2E	begins with 12.
37	6D	6D	20	28	30	2E	35-69	6E	29	20	66	72	6F	6D	7mm (0.5in) from
20	74	68	65	20	70	72	69-6E	74	65	72	0A	0D	70	68	the printer
79	73	69	63	61	6C	20	6C-65	66	74	20	6D	61	72	67	ysical left marg
69	6E	2E	20	20	54	68	65-20	61	6C	70	68	61	62	65	in. The alphabe
74	69	63	20	66	69	65	6C-64	20	28	41	41	41	2E	2E	tic field (AAA..
2E	41	41	41	29	20	69	73-0A	0D	70	72	69	6E	74	65	.AAA) is
64	20	69	6E	20	61	63	74-69	76	65	20	63	68	61	72	printe
61	63	74	65	72	20	73	65-74	2E	0A	0D					d in active char
															acter set.

Glossary

ASCII. American National Standard Code for Information Interchange. The code is used to exchange information between data processing systems, communication systems, and associated equipment. It uses a coded character set which consists of 7-bit graphic and control characters.

aspect ratio. The horizontal to vertical size factor of individual bit image graphic data in your printer's graphic function. The ratio varies, depending on the setting of the printer control code *ESC n*.

BASIC. Beginner's All-Purpose Symbolic Instruction Code. A programming language designed primarily for numeric applications. It has a limited number of commands and a simple syntax.

bit image. The content of a data bit (a synonym for binary digit) when the printer is being used in its graphic function.

buffer. A temporary storage area in your printer which holds data sent from the computer.

burst speed. The speed at which one line is printed. Carrier returns and line indexing are not included.

coded character set. A set of characters together with the code assigned to each character for computer use.

download. To transfer a program or data file from a central computer to a remote computer or to the memory of an intelligent terminal. In this manual, transferring data from a diskette to a pluggable font cartridge.

default. An alternative value, attribute, or option that is assumed when none has been specified. For this manual, original settings as when shipped from the factory or as changed by switch settings.

font. Typestyle (size and shape of type). As used in this manual, embedded (internal) or pluggable (external) fonts.

graphics. In this manual, printing charts, characters, or drawings by all-points-addressable printing technology on the IBM "Quietwriter" III Printer.

index. To move the paper vertically.

interface. A shared boundary. In this manual, interface refers to the connection between your computer and your printer.

line feed. The action that moves your paper up; specifically, the incremental relative movement between the paper carrier and the type carrier in a direction perpendicular to the writing line.

pinwheel form feeder. An optional attachment for your printer that uses continuous form paper. The paper has punched tracks along each side and perforations at the end of each sheet. The punched tracks mesh with the feeder pinwheels, and the perforations allow you to separate the pages.

sheetfeed. An optional attachment for your printer that uses sheet paper in normal width and lengths. The feeder automatically feeds one sheet at a time to your printer.

throughput. A measure of the amount of work performed by a system (in this case, a printer) over a given period of time, for example, pages per minute.

Index

A

- active font, checking 3-10
- ASCII, defined 7-1
- aspect ratio
 - defined 7-1
 - select command 4-54
- auto line feed, begin/end command 4-26

B

- backspace command 4-20
- BASIC, defined 7-1
- bell (beeper) command 4-20
- bit image density
 - dual 4-35, 4-42
 - high 4-42
 - normal 4-34
- bit image, defined 7-1
- brown felt pad, changing 5-8
- buffer, defined 7-1
- burst speed, defined 7-1
- buttons, printer control

Font 3-10

Form Feed 3-3

↑ (Incr) 3-2

↓ (Incr) 3-3

paper movement 3-2

Print Mode 3-4

printer control 3-1

Reset 3-2

Set Top of Form 3-21

Start/Stop 3-1

C

- cable, printer 2-12
- carrier return
 - command 4-22
 - switch setting for 4-7
- change font command 4-31
- character font image download command 4-27

- character set, selecting
 - command for set 1 4-26
 - command for set 2 4-26
 - switch settings for 4-7
- cleaning
 - cardholder 5-8
 - platen 4-12
 - ribbon feed rollers 5-8
- code page, select command 4-49
- coded character set, defined 7-1
- command alteration
 - switch setting for 4-7
- command prefix 4-24
- commands, printer 4-14
- contrast control 4-13
- control codes, printer 4-20
- cover switch 4-4
- cover, installing 2-5

D

- default, defined 7-1
- deselect printer command 4-39
- double-wide printing
 - begin command 4-23
 - continuous, begin/end command 4-40
 - end command 4-24
- download
 - defined 7-1
 - fonts 3-9
- Draft** light 4-1
- dual density bit image command 4-35, 4-42

E

- emphasized print commands
 - begin horizontal 4-30
 - begin vertical 4-31
 - end horizontal 4-30
 - end vertical 4-31
- end parameter list command (Null) 4-20

Enhanced light 4-1

escape sequences 4-25

ESC ^ 4-52
ESC - 4-25
ESC] 4-52
ESC : 4-27
ESC = 4-27
ESC [F 4-45
ESC [I 4-46
ESC [\ 4-50
ESC [S 4-48
ESC [T 4-49
ESC A 4-28
ESC B 4-28
ESC C 4-29
ESC C O 4-29
ESC D 4-29, 4-53
ESC E 4-30, 4-53
ESC F 4-30
ESC G 4-31
ESC H 4-31
ESC I 4-31
ESC J 4-33, 4-53
ESC K 4-34
ESC L 4-35
ESC N 4-37, 4-54
ESC O 4-37
ESC P 4-38
ESC Q 4-39
ESC R 4-39
ESC \ 4-52
ESC S 4-40
ESC T 4-40
ESC W 4-40
ESC X 4-41
ESC Y 4-42
ESC Z 4-42
ESC 0 4-25
ESC 1 4-25
ESC 2 4-25
ESC 3 4-25
ESC 4 4-26
ESC 5 4-26
ESC 6 4-26

ESC 7 4-26

F

felt pad, changing 5-8

font

active 3-10
defined 7-1
emulation 4-10
manual selection 3-11
select command 4-31

Font button 3-11**Font** light 4-3

font selection

commands 4-31, 4-46
embedded 3-6, 4-9
pluggable 3-8, 4-10
with setup switches 4-9

fonts

downloadable 3-9
embedded 3-6
ordering 5-1, 5-11
pluggable 3-8

Form Feed button 3-3

form feed command 4-22

form feeder, pinwheel

defined 7-2
installing 3-13
installing forms 3-15
paper dimensions 3-13
removing 3-23
removing forms 3-22

form length

switch setting for 4-7

G

graphics

capability 4-66
defined 7-2
modes 4-66

graphics line spacing, set

command 4-25

H

- hex trace dump test 6-17
- high density bit image command 4-42
- horizontal margins, set command 4-41
- horizontal tabs 4-21
 - set command 4-29

I

- Incr** (↑) 3-2
- Incr** (↓) 3-3
- index, defined 7-2
- initialization 4-14
- inserting paper, single sheet 2-8
- installing
 - form feeder 3-13
 - forms 3-15
 - pluggable fonts 3-8
 - power cord 2-6
 - ribbon 2-2
 - top cover 2-5
- interface 4-5
- interface, defined 7-2
- interrupting printing 3-2

J

- justifying text, with PS font 4-66

L

- lights, printer
 - Draft** 4-1
 - Enhanced** 4-1
 - Font** 4-3
 - Paper** 4-2
 - Quality** 4-1
 - Ready** 4-1
 - Ribbon** 4-2
- line feed 4-21
 - defined 7-2
 - reverse 4-52
 - switch setting for 4-7
- line spacing
 - activate variable command 4-25

- set graphics command 4-25
- set variable command 4-28
- set 1/8-inch command 4-25
- set 7/72-inch command 4-25
- switch settings for 4-7

M

- margins
 - horizontal set command 4-41
 - vertical, set command 4-48
- model number 1-2

N

- normal density bit image command 4-34

O

- ordering supplies 5-1

P

- page length
 - set in inches command 4-29
 - set in lines command 4-29
 - switch setting for 4-7
- Paper** light 4-2
- paper movement buttons 3-2
- paper recommendations 5-12
- paper, inserting single sheet 2-8
- pinwheel form feeder
 - defined 7-2
 - installing 3-13
 - installing forms 3-15
 - paper dimensions 3-13
 - removing 3-23
 - removing forms 3-22
- pitch selection commands
 - proportional spacing 4-38
 - 10 pitch 4-23
 - 12 pitch 4-27
 - 17 pitch 4-23
- pitches 3-6
- pluggable fonts 3-8

- power cord, installing 2-6
- power switch 2-7
- power-on self test 6-14
- print all characters command 4-52
- Print Mode** button 3-4
- print mode selection 3-4
 - switch settings for 4-11
- print next character command 4-52
- print quality 4-12
 - command 4-31
- printer cable 2-12
- printer commands 4-14
- printer control buttons
 - Font** 3-10
 - Form Feed** 3-3
 - ↑ (Incr) 3-2
 - ↓ (Incr) 3-3
 - paper movement 3-2
 - Print Mode** 3-4
 - Reset** 3-2
 - Set Top of Form** 3-21
 - Start/Stop** 3-1
- printer control codes 4-20
 - BEL 4-20
 - BS 4-20
 - CR 4-22
 - DC1 4-23
 - DC2 4-23
 - DC4 4-24
 - ESC 4-24
 - FF 4-22
 - HT 4-21
 - LF 4-21
 - NUL 4-20
 - SI 4-23
 - SO 4-23
 - SP 4-24
 - VT 4-21
- printer self test 2-10, 6-15
- printer status 3-1
- printer table 4-57
 - explanation 4-55
- printhead
 - changing 5-5
 - removing 5-6
 - replacing 5-7
- product name 1-2

- proportional space font selection command 4-38

Q

- Quality** light 4-1
- quick reference commands
 - charts 4-16

R

- Ready** light 4-1
- removing
 - form feeder 3-23
 - forms 3-22
 - ribbon 5-3
- reset all tabs command 4-39
- Reset** button 3-2
- reset function 3-2
- reverse line feed command 4-52
- ribbon
 - changing 5-2
 - installing 2-2
 - ordering 5-1
 - removing 5-3
 - replacing 5-4
- Ribbon** light 4-2

S

- safety guidelines 1-3
- select printer command 4-23
- select sheetfeed command 4-45
- serial number 1-2
- Set Top of Form** button 3-21
- set top of form command 4-26
- setup switches 4-6
- sheetfeed, defined 7-2
- skip perforation
 - reset command 4-37
 - set command 4-37
 - switch setting for 4-7
- software support 4-65
- space backward command 4-53
- space command 4-24
- space forward command 4-53
- Start/Stop** button 3-1

- stop command 4-53
- subscripts/superscripts
 - begin command 4-40
 - end command 4-40
- switches, setup 4-6
 - carrier return 4-7
 - character set 4-7
 - command alteration 4-7
 - embedded font selection 4-9
 - font emulation 4-10
 - form/page length 4-7
 - line feed 4-7
 - line spacing 4-7
 - pluggable font selection 4-10
 - print mode 4-11
 - skip perforation 4-7
 - switch group 1 4-7
 - switch group 2 4-9

T

tabs

- horizontal 4-21
- horizontal, set command 4-29
- reset all command 4-39
- vertical 4-21
- vertical, set command 4-28

test

- hex trace dump 6-17
- power-on self 6-14
- printer self 2-10, 6-15
- throughput, defined 7-2
- top of form, setting
 - command 4-26
 - with printer control buttons 3-21
- transparencies 5-13
- turning on the printer 2-7

U

- underline command 4-25

V

- variable line feed commands 4-33
- variable line spacing
 - activate command 4-25
 - set command 4-28
- vertical margins, set command 4-48
- vertical tabs 4-21
 - set command 4-28
- vertical units, set command 4-50

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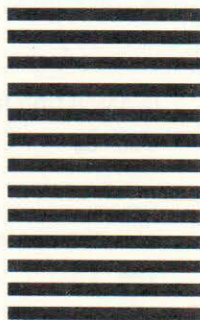
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Tape

Canadian Department of Communications (DOC) Compliance Statement

This equipment does not exceed Class B limits per radio noise emissions for digital apparatus, set out in the Radio Interference Regulation of the Canadian Department of Communications. Operation in a residential area may cause unacceptable interference to radio and TV reception requiring the owner or operator to take whatever steps are necessary to correct the interference.

The above statement applies only to those machines used in Canada.

Avis de conformité aux normes du ministère des Communications du Canada

Cet équipement ne dépasse pas les limites de Classe B d'émission de bruits radioélectriques pour les appareils numériques, telles que prescrites par le Règlement sur le brouillage radioélectrique établi par le ministère des Communications du Canada. L'exploitation faite en milieu résidentiel peut entraîner le brouillage des réceptions radio et télé, ce qui obligerait le propriétaire ou l'opérateur à prendre les dispositions nécessaires pour en éliminer les causes.

Cet avis ne s'applique qu'aux machines utilisées au Canada.



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